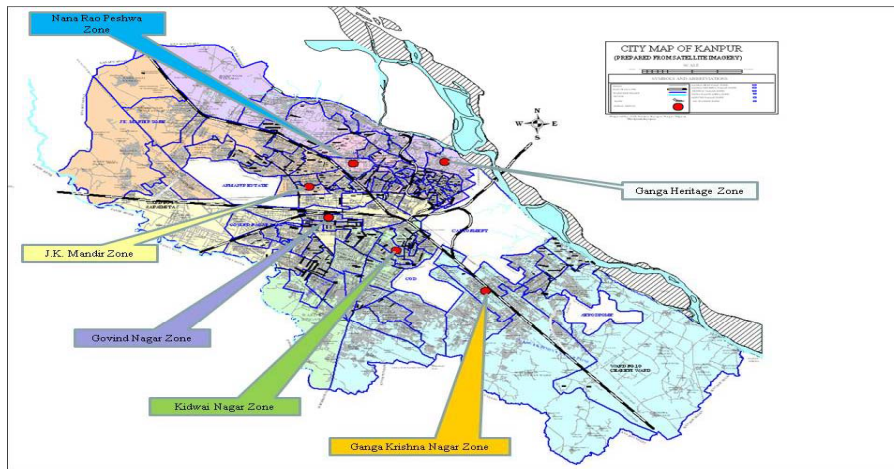


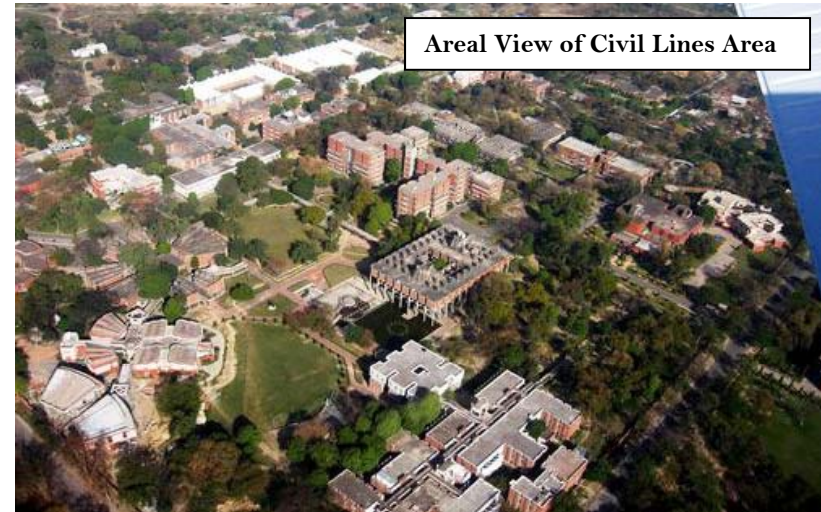


# Kanpur Municipal Corporation (KMC)

City Map of Kanpur & Zonal Office Locations



Areal View of Civil Lines Area



Welcome in the workshop organized  
by



C.S.E Centre for Science & Environment , Delhi  
and Govt of U.P.

# Presented By-

## About me



### **U.N.Tiwari**

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Website: <http://kmc.up.nic.in>

- **This presentation includes ...**
- Bio- Remediation
- Water Energy Co-management
- Rain Water Harvesting
- Kanpur Integrated Solid Waste Management

# ABOUT KANPUR

- Biggest Industrial city of Uttar Pradesh.
- Situated at the bank of National River Ganga.
- Leather Capital of India



# About Kanpur Municipal Corporation

Area - 260 Sq.K.m  
Population - 27.74 Lakhs.  
( 2011 census)

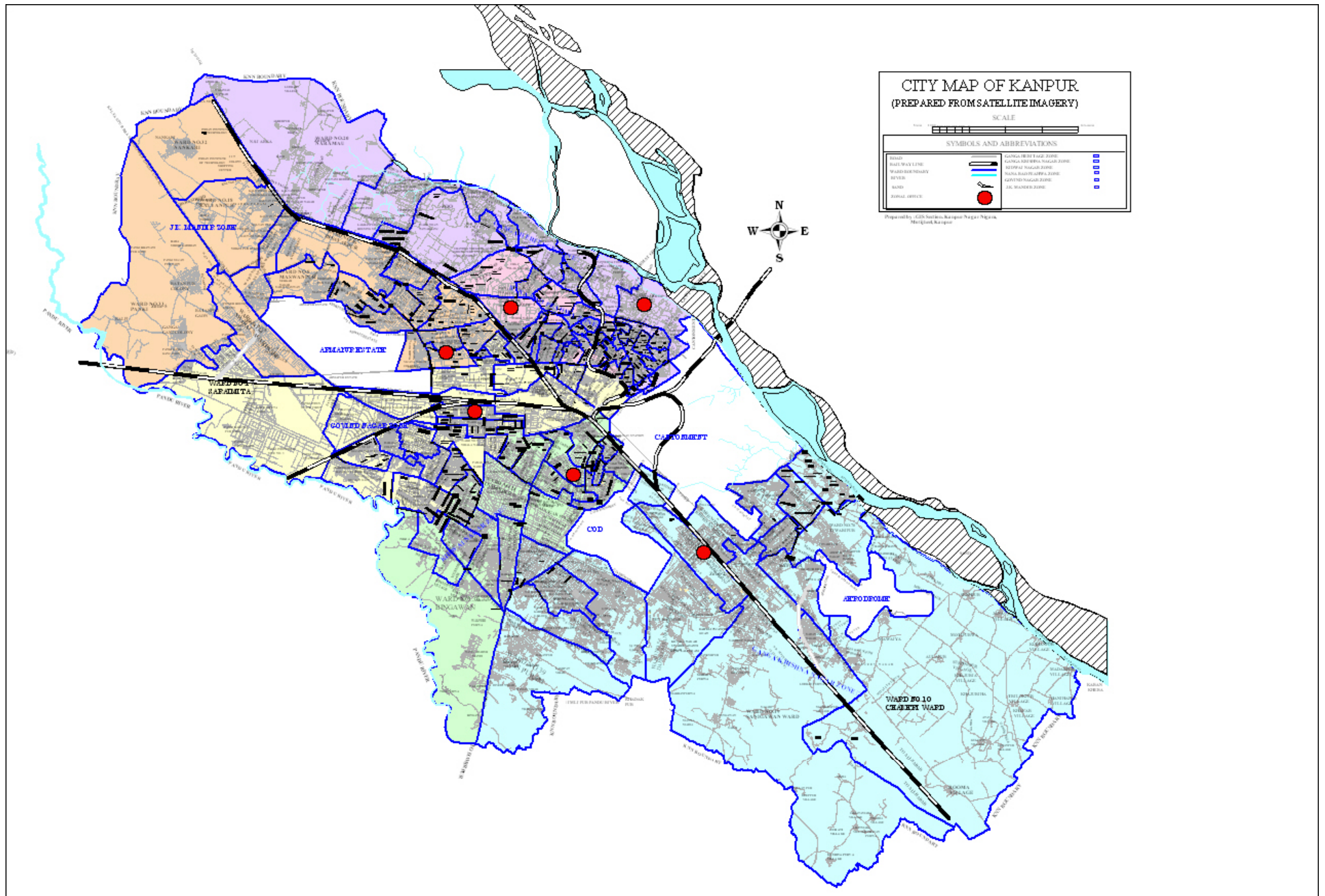
## Administrative Divisions

Zones - 6  
(with 18/19 wards)

Wards - 110

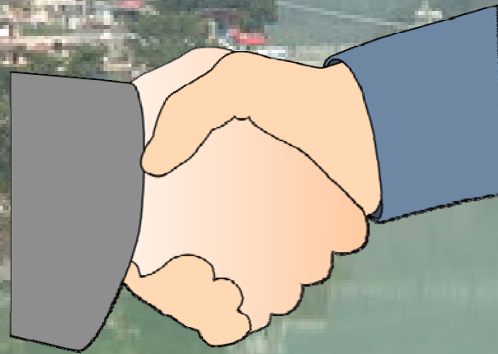


# Digital Map of Kanpur & Zonal Office Locations



# Living Ganga Programme (under the HSBC Climate Partnership)

## Kanpur Municipal Corporation



&  
WWF-India

# Bio- Remediation

➤ Bio Remediation is the natural & single celled solution for mitigating contaminants of concern polluted waste sites and environmental hazards.

➤ For the conservation of Water of River Ganga Kanpur municipal corporation completed Two successful pilot projects:-

**Upscaling the On- Channel treatment of Wastewater in drains through Bioremediation named**

- Stretch of the kutchra drain 'Kalyanpur - Singhpur'
- Kanpur zoo drain & lake

**under the WWF India's Living Ganga Programme in Kanpur.**

➤ **Achievements was**

- Visible improvement in quality of water
- Absence of odour
- Average BOD reduction with treatment is 82%, TSS 72%(),
- Improvement in DO from 0.00 to 1.83

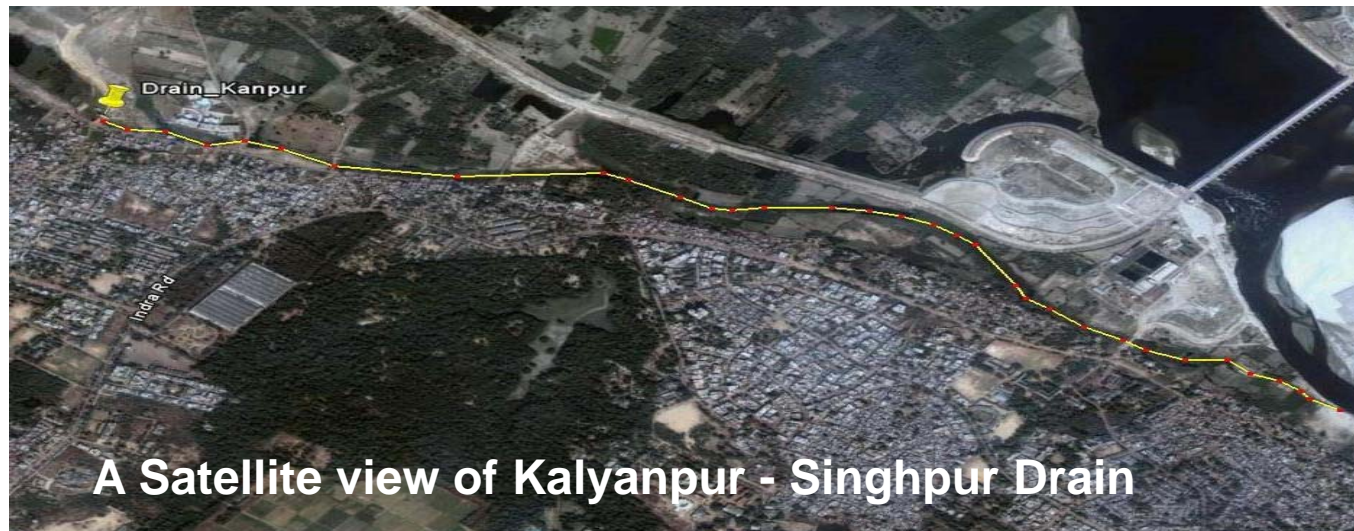
➤ **On-channel treatment” with “Anoxic Bioremediation (ABR) Technology”** is low cost wastewater treatment technology which can be easily implemented in drains where other treatment facilities are difficult to implement.



# Bio- Remediation



A view of Kalyanpur - Singhpur Drain project



A Satellite view of Kalyanpur - Singhpur Drain



# Water Energy Co-management

➤ The relation ship between energy required for pumping water in our homes ,industries and treat is defined as Watergy .

➤ With aim to ensure increased watergy and continued water energy co-management in Kanpur WWF India along with its partner ,ICELI Asia, has developed business case studies for four facilities in Kanpur named:-

S.N	ZPS	Recommendations
1.	Bal Nikunj Zonal Pumping Station	Install Capacitor Bank
2	Lenin Park Zonal Pumping Station-	Changing the disc type NRVs with hydro dynamically guided control NRVs.
	Canal patri Zonal Pumping Station	Install calibrated Instruments
	Ratanlal Nagar Zonal Pumping Station	Trim Impeller Diameter

➤ These business cases have been developed by following steps:-

- Energy Audits
- Recommendations(no-cost-low cost-high cost )
- Training Programmes
- Monitoring
- Achievements

➤ This all was done in collaboration with Kanpur Nagar Nigam and Jal Kal Vibhag.

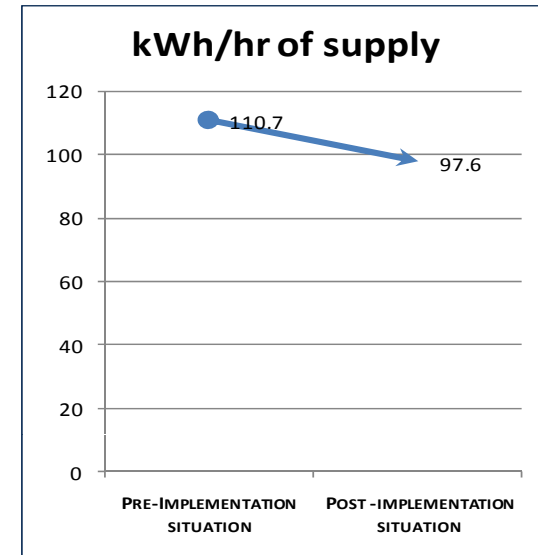
## Output of the Energy Efficiency Interventions are

- Energy audits of water and sewage pumping stations
- Training of various levels of officials and support staff, and
- Implementation and monitoring of :
  - **No cost-** better management practices/ very small changes e.g. starting pumps with delivery valves closed, a combination of pumps at one time.
  - **Medium cost-** Installation of NRVs, capacitor banks etc.
  - **High Cost-** Replacement of over sized & under sized pumps.

# Ratan Lal Nagar Zonal Pumping Station

## HIGHLIGHTS

- 12 % Energy Savings Achieved through better operating practices.
- Trained pool of operators available
- Engineers Sensitized Towards Energy Savings



Low Cost No Cost Training to Operators of Ratan Lal Nagar Zonal Pumping Station

# Bal Nikunj Zonal Pumping Station

## HIGHLIGHTS

- After the successful demonstration of Low-cost Measures,,
- Installation of a capacitor bank has been implemented at the Bal Nikunj Zonal Pumping Station at Kanpur.
- Pre- intervention data for monitoring purposes has been collected and monitoring for post-intervention data is presently going on.
- Preliminary results suggest an increase in Power Factor from 0.85 to 0.99, from pre to post intervention stage.

**This would mean a reduction in electricity bills by approximately 15%.**



Monitoring of the Installed Capacitor Bank at Bal Nikunj Zonal Pumping Station, Kanpur



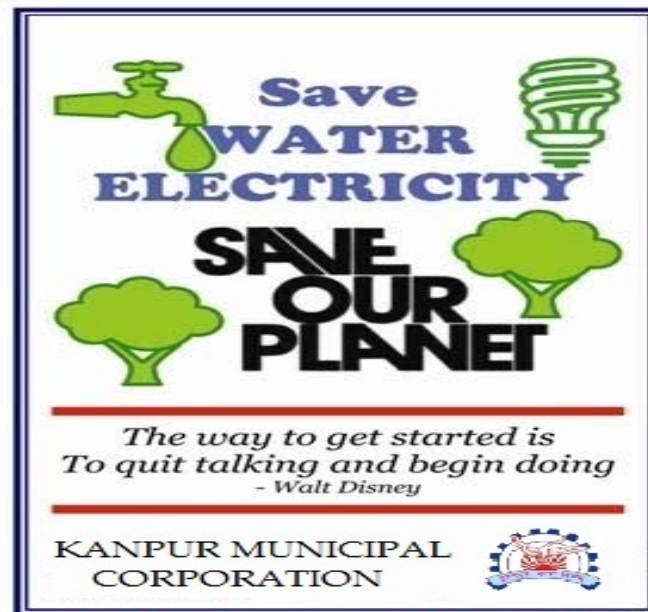
# Rain Water Harvesting

- In the present scenario management and distribution of water has become centralized. People depend on government system, which has resulted in disruption of community participation in water management and collapse of traditional water harvesting system.
- As the water crisis continues to become severe, there is a dire need of action in the RWH reform so that ground water can be recharged easily.
- Rain water harvesting has been made mandatory for construction of building more than 300 sq. mt under this byelaw. RWH will be mandatory for future buildings.
- Approximately 957 buildings plans map have been sanctioned with RWH provisions.
  - Group housing sanctioned-52
  - Under construction-15
  - R.W.H. Completed in -48 buildings
- Rain Water Harvesting System have been installed in main building of Kanpur Municipal Corporation and also proposed to be install in all 6 Zonal buildings of Kanpur Municipal Corporation.

## Revision of Building Byelaws to Make RWH Compulsory



A View of RWH installed in KNN campus



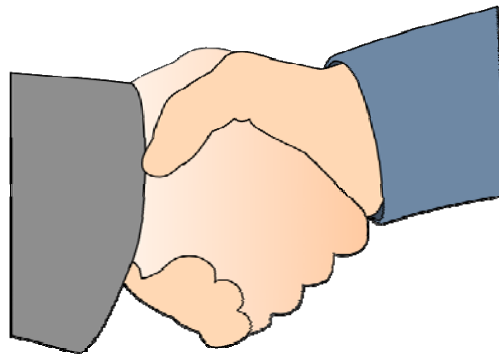


Thank you



# INTEGRATED MUNICIPAL SOLID WASTE MANAGEMENT PROJECT

**Kanpur Municipal Corporation**



PRIVATE PARTNER –  
**A2Z INFRASTRUCTURE LTD**



# SOLID WASTE MANAGEMENT PROJECT (SWM)

## INTRODUCTION

Human activities create waste and the ways that waste is handled, stored, collected and disposed of can pose risk to environment and to public health. Solid waste management (SWM) includes all activities that seek to minimize health, environmental and aesthetic impacts of solid waste. Kanpur was not having the standardized SWM facilities.

## BEFORE THE PROJECT

Kanpur had a typical waste management system which included the following elements:

- Waste generation and storage
- Throwing garbage on roads, a little segregation and recycling by rag pickers
- Primary waste collection and transport to a transfer station or community bin
- Street sweeping and cleansing of public places
- Management of transfer station or community bin
- Secondary collection and transport to the waste disposal site
- Waste disposal in landfills
- Collection, transportation and treatment of recyclable at all points on the solid waste pathway (collection, transportation disposal.)



Kanpur Municipal Corporation had proposed an integrated waste management project .The idea was to create an ideal & unique integrated solid waste management system including, door to door collection, transportation, treatment & disposal facility for 30 years on PPP basis. To execute this project M/S A2Z Infrastructure Ltd. Gurgaon has been selected as partner.

**Project Components:-**

- Door-to-door collection & transportation.
- Construction, operation and maintenance of the processing plant for generation of compost, Refused derived fuel (RDF), Interlocking tiles, Plastic board etc. Recycling of waste, production of energy from Biomass.
- Construction, operation and maintenance of the sanitary landfill.
- Public education / awareness related to MSW.

**Project implementation details:-**

<b>Sl No.</b>	<b>Parameter</b>	<b>Details</b>
<b>1</b>	Name of Project	Integrated Solid Waste Management ,Kanpur city U.P
<b>2</b>	Location of Project within city	Kanpur Panki ,Bhausingh
<b>3</b>	Purpose and expected outcome of the project	To recognize the deficiency in the system & implementation of comprehensive plan for swm in Kanpur city in compliance with MSW rules 2000.for improving living condition of human being as well as the overall environment of the city .
<b>4</b>	Geographical coverage details	Kanpur Municipal Corporation limit 260 sq km.
<b>5</b>	Date of issue of tender document	8-4-2008
<b>6</b>	Date of award of work	7-8-2008
<b>7</b>	Mode of Project	BOOT
<b>8</b>	Date of project completion	Dec 2012
<b>9</b>	Service levels standards fixed	As defined in MSW Rules 2000
<b>10</b>	Technology used	Integrated , composting, RDF, Plastic recycling, Production of energy from Biomass

## Technical summary of the project:-

Sl.No		
1	Garbage produced per capita	472 gm/person/day
2	Project deadline	30 years
3	Land	46 hectare
4	Project cost	Rs. 56.23 Cr. (Based on PPP mode, Funds of the operator is not included)
5	Employment from Project	2500 person
6	construction waste	10 percent
7	Organic waste	50-55 percent
8	Plastic	6 percent
9	Project starting time	2 years
10	Fee paid to A2Z for the maintenance of landfill site	Rs.95/ MT
11	Tipping fees being paid to A2Z for Door to door collection,transportation,treatment	456/ MT
12	Annual Operation and Maintenance	A2Z infrastructure Ltd.

## Project Economy: -

Sl No	Plant capacity	1500 tons per day
1	Number of Vehicles	1256
2	No of Dust bins	1835
3	Total no of workers engaged in Door to Door Collection and Transportation (C and T)	2048

## Types of products from Waste: -

1	Compost	40-50%
2	Refused derived fuel	30-35%
3	Plastic seat	10 to 35%
4	Interlocking tiles	2%



### Collection and Transportation Vehicles



### C&T Process



## Door to Door Collection of Waste by A2Z

## C&T Process



**Door to Door Collection of Waste BY  
A2Z**



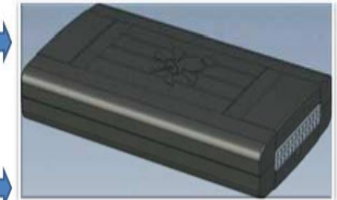
### Transfer of waste from Major open dump to JCB+ Dumper

### Transfer of waste from Bins/Tipper to compactor



## GIS & VTS is used for Planning & Monitoring

- Each & every lane of each ward and each bin location are mapped, marked and tabulated.
- Each of the vehicles is equipped with GPS system and every incidence of the compactor halting at every bin is monitored and recorded.







Administrative Building of Integrated waste management plant at Kanpur



An overview of compost plant



Garbage receiving platform



Windrows



Primary Screening of Compost



Presorting at ISWMP



GRAVITY SEPARATOR FOR SAND REMOVAL



CYCLONE FOR DUST CONTROL



Final Screening of Compost



## Products after the processing of waste material:-

Finished compost and green compost enriched with bacteriological dosing such as Azatobacter and Trichoderma (50 kg/110.0/per/bag ) named as Hariyali And Vasundhara Refused derived fuel(RDF) Plastic sheet Interlocking tiles etc. All of the above products are being sold out



Compost packing



Green compost



Up the store



Basundhara Bio-Fertilizer



RDF Section



FERMENTOR FOR MASS



Lab

<u>User Charge:-</u>	
Urban poor	Rs.15
Residential	Rs 30-50
Industrial	Rs 1000-6000

### **ORIGINALITY/NOVELTY: -**

It is the first Sustainable, Integrated Waste Management plant in Asia. The previous failures were because of the lack of segregation of waste at source. The technology used at Kanpur includes segregation and treatment at site only with less than 10% going to the Sanitary land fill . Thus Novelty can be described in following points:-

- Sustainable Model
- Near Zero Landfill, so maximum derivation.
- Segregation at site.
- Various Products derived after the processing of waste material eg; Compost, Biocompost, Plastic board, interlocking of tiles, Energy framework the biomass.
- Use of every component of garbage.
- Use of RDF as fuel in the Thermal power plant established by operator at site.
- PPP mode implementation strategy.
- Operation and Maintenance expenses:-
  - From user charges being levied from the House hold for the services of door to door collection & saving from this head.
  - Transportation & SLF maintenance charges being paid getting carbon credit & sale processed from the sale of various recycled products .



### **DEMONSTRATED COMPETITIVE ADVANTAGES: -**

- Removal of bigger & smaller garbage collection centre. Thus a cleaner look of Kanpur.
- Collection of user charges, an additional source to fund the financial gap.
- Cooperation & support of citizens & Media.
- Distinguished Persons, Public Representative, Officers from different part of country & abroad have visited the plant to see the success of the plant such as:-
  - Chief Secretary, Special Secretary and other representative of the various state governments.
  - Hon'ble Union Minister Farooq Abdullah and another representative of Government of India.
  - Mayor of Municipal Corporation of Delhi.
  - Municipal Commissioner, Vijayawada, Allahabad.
  - Various people's representatives of Surat, Indore, Ludhiana, Pilibhit visited the plant.
  - Registration of rag pickers by KNN for their better future.



**A view of the training program organized for the children of families of rag pickers of Kanpur city**

## IMPACT OF THE PROJECT





The success of the project has been recognized by Govt of India. Kanpur Municipal Cooperation has been given JNNURM award of Excellence under the category- **Best City Award for improvement in Solid Waste Management-2011.**



The award was handed over by **Prime Minister Dr. Manmohan Singh** on 13 Dec, 2011 at Vigyan Bhwan, New Delhi.

# SKOCH DIGITAL INCLUSION AWARDS-2012



**For Service  
Delivery  
GOLD  
for GIS Based  
Garbage  
Collection**



**Highest Independent Honour in India on 18<sup>th</sup> September, 2012 at New Delhi**





Thank you



# An Introduction of KMC e-Governance & GIS Projects



&



# Implementation strategy of e-Governance

- Robust IT-Infrastructure
- Connectivity /Networking
- e-GOV ERP software & Dedicated website <http://kmc.up.nic.in> with online knowledge repository of day to day information,
- Trained and motivated Human resource ( Regular/Trough outsourcing)
- Establishment of Centre for Excellence to cater day to day training and Capacity building activities.
- Regular Training Sessions in the Centre for Excellence and outstation organizations (CSE, IIPA, ASCI, RCEUS NIUA etc. And in different outstation workshops.

# Implementation strategy Contd...

Hardware 150  
Computers+630  
expected additions  
Networking by  
procuring 5 Servers  
connectivity by RF and  
Lease Lines.



(IT) Cell with GIS expert  
for handholding support  
and training .

Technical team is accountable for regular operation and management of the system.

## Full time:

- ☐ Additional Municipal Commissioner,
- ☐ I.T. Officer: (PIU)
- ☐ GIS Coordinator: (out source basis)
- ☐ Software Developer. (out source basis)
- ☐ Web Developer (out source basis)
- ☐ 20 Computer Operators (Regular)
- ☐ 26 Computer Operators. (out source basis)
- ☐ Trained Computer clerks



“KNN Centre For  
Excellence” has been  
established to cater the  
need of capacity  
building.





# Implementation strategy Contd...

## Change management –

Government Process Re-engineering

- In consultation with experts and staff (Stake holders) under the leadership of Municipal Commissioner



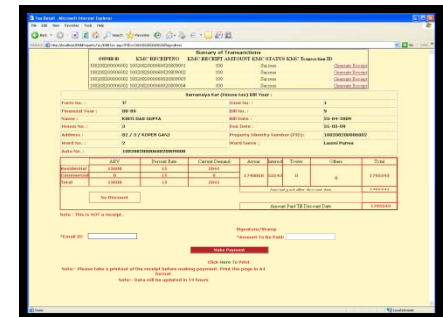
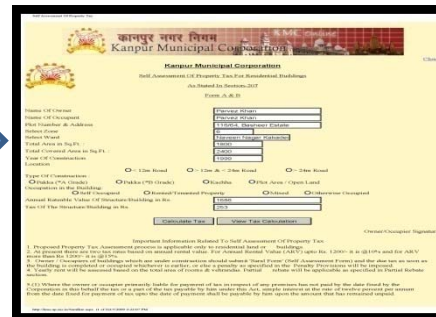
## Citizen Participation-

Grievance redressal

Self Assessment of P. Tax with view Calculation facility ,

Online Payment of Property Tax ,

Registration of Birth and Death , Online Availability of forms and formats ,Board proceedings etc. As Knowledge Repository c.



## Working Modules –

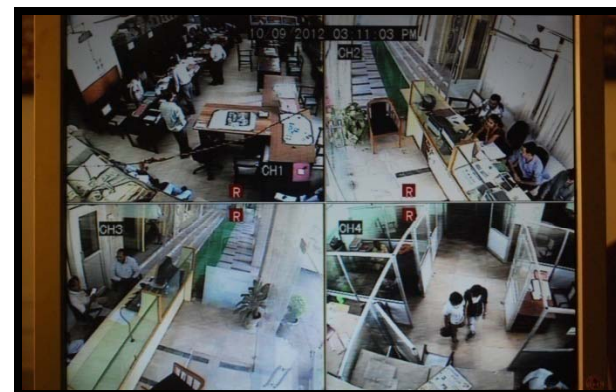
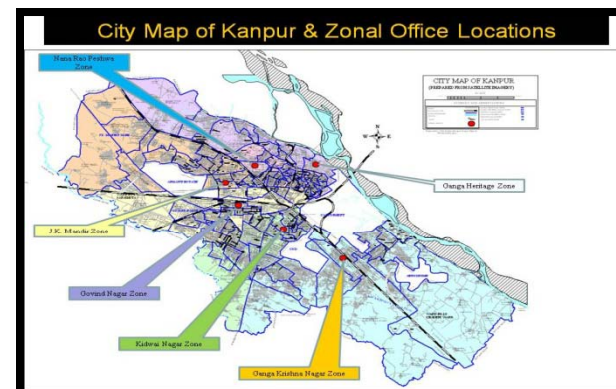
### •GIS based Property tax management system (ArcGIS-)

web based Integrated municipal ERP System for :-

- Double Entry Accounting, System,
- Ward Works Management System,
- PIS and Payroll
- Inventory Management System,
- Collection Management System,
- Asset and Estate Management System,
- Document Management System,
- Legal cases management system

# Innovation

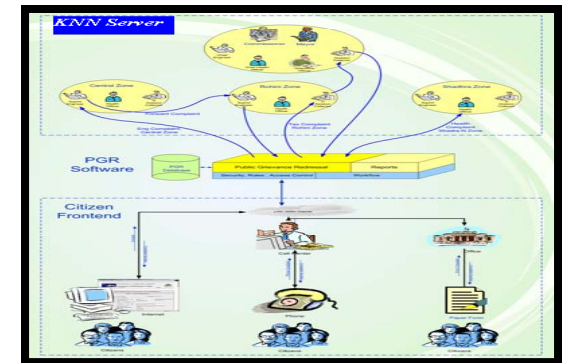
- Decentralization of Zone offices -with Hardware based Video - Conferencing facility (HQ+2Zones in Ist phase )for citizen / staff interaction .
- Using online integrated applications to reduce the area boundaries and data redundancy.
- Use of Electronic fund transfers like RTGS /NEFT/Online Payment Gateway and ESC.
- CCTV camera monitoring for public dealing counters in Municipal Corporation head office.
- Implementation of e-governance Project through NIC with State ERP solution as 1st ULB
- Expansion of Citizen Service from Zone office to ward level- 31 citizen facilitation centres(CFC) Locations in phase I



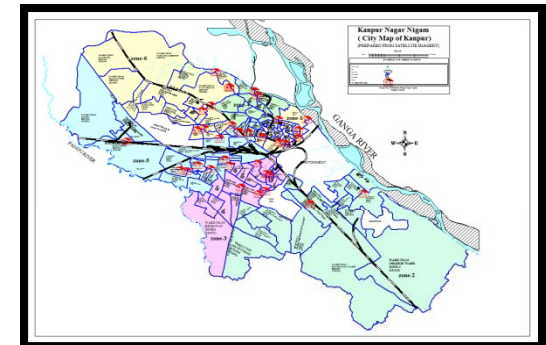
# Stepping Forward

Considering the need of centralized uniform application for state, State E Governance ERP is under development and KNN has been Selected as Pilot city for state E Governance Project.

Works like RF Connectivity , Office Renovation and Service provider in PPP model are being processed.



KMC Complaint Redressal System



GIS Map Marked 31 locations of CFC

## 2. GIS

# Geographical Information System



- **Geography – Space (Importance of space)**
- **Information – Data and its meaning**
- **System – Electronic tool to help analyze space and data,**  
**thus identifying gaps with ease**

**GIS IS A PLANNING TOOL**



# Why we use GIS in Local government?

- 24/7 ready Digital Map,
- Planning Tool
- Can display the **problems** and the **solutions** on the maps

## To Promote –

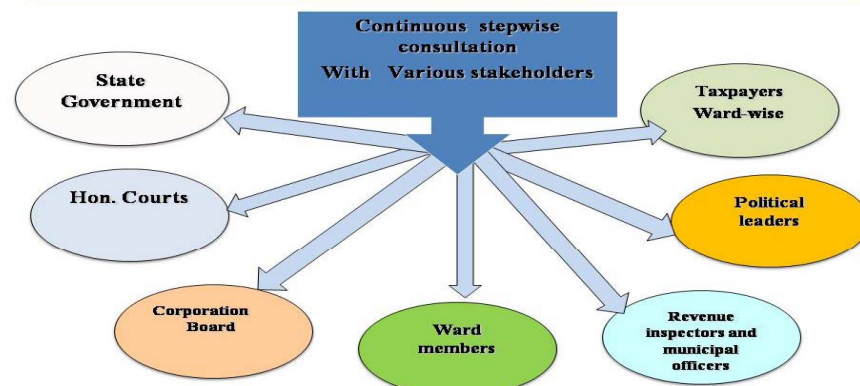
- Transparency/Accuracy/Productivity
- Efficiency /Quality
- Equality
- Revenue
- Accountability

# Implemented KMC Property Tax Management System Using Geo-Spatial Technology –A Hurdle race

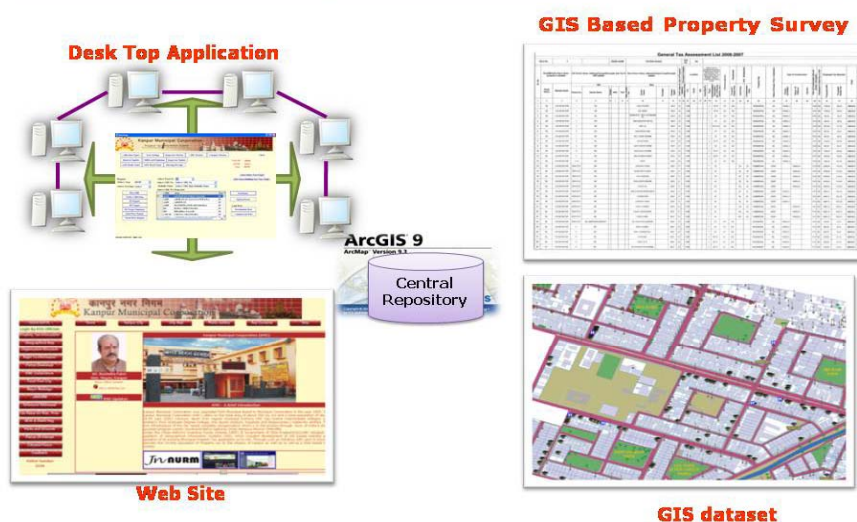
## An Integrated concept

- Procurement of satellite images
- Ground survey based Geo-rectification of the satellite image
- Updation and migration of existing GIS data set using QB image
- Contact survey to collect details for every property unit
- Spatial ground survey
- Spatial and non-spatial data link to create spatial property database
- Development of web GIS system for online property tax calculation and payment
- Development of desktop application for property database repository management and tax assessment
- Training KMC Personnel
- Renumbering of properties with unique premises no. as prescribed in Modern Municipal law and fixing of house number plates at the cost of owner/occupier

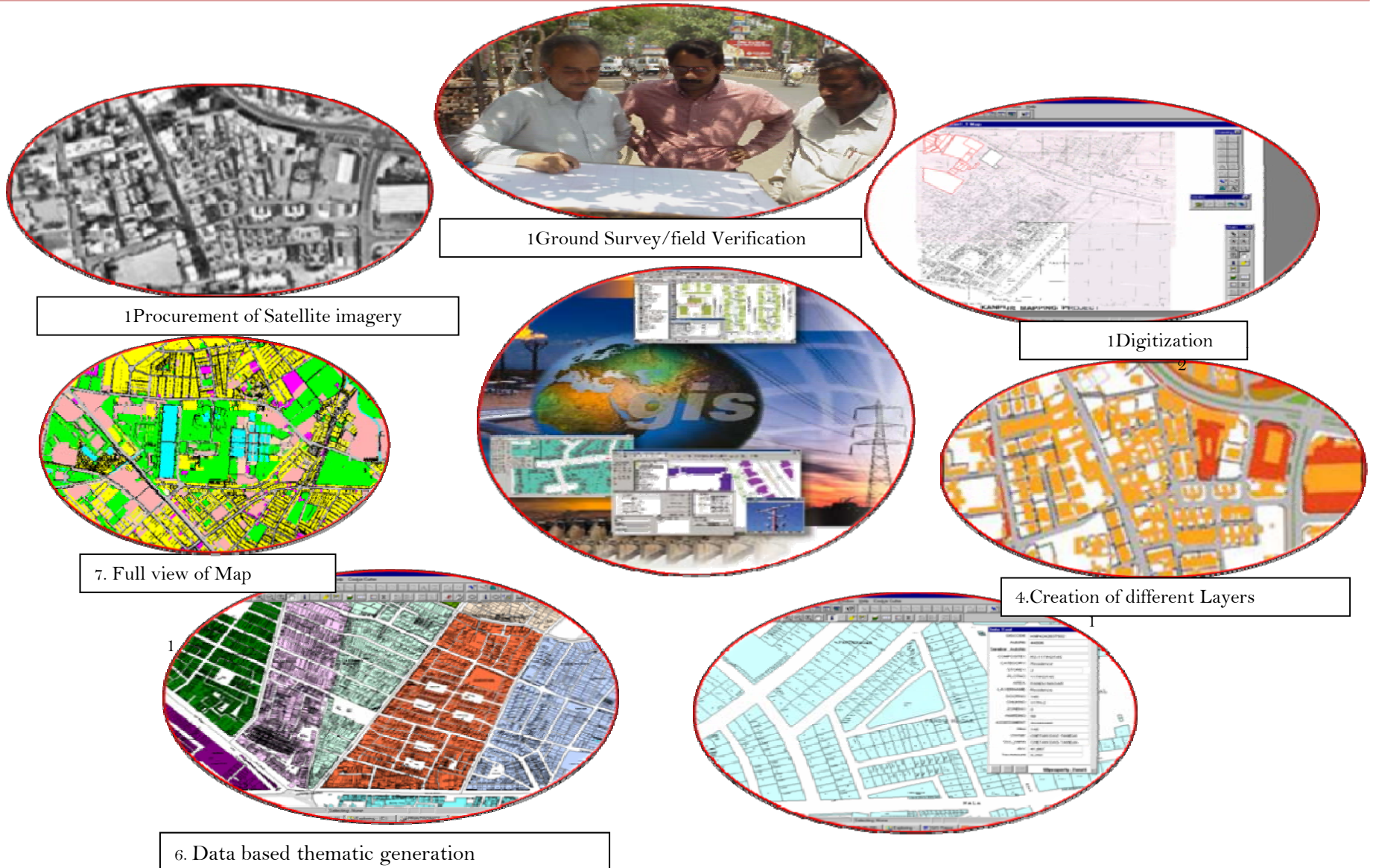
## THE SUCCESS OF THE THIS PROJECT IS BECAUSE OF ...



## Major Components of the Project



# GIS BASED PROPERTY MAPPING/TRACKING PROCESS





## PUBLIC NOTIFICATION FOR GIS SURVEY THROUGH PRINT MEDIA

[illegible][illegible]

4

कानूनी मामलें विरासत

1. कानूनी मामलें विरासत  
2. कानूनी मामलें विरासत  
3. कानूनी मामलें विरासत

# जीत ली जंग



1. कानूनी मामलें विरासत  
2. कानूनी मामलें विरासत  
3. कानूनी मामलें विरासत

**कानूनी नवीं राहा सरल कर**

कानूनी नवीं राहा सरल कर

कानूनी नवीं राहा सरल कर

कानूनी नवीं राहा सरल कर

कानूनी नवीं राहा सरल कर

कानूनी नवीं राहा सरल कर



### Ward-wise Assessment List Register





# Benefits from KMC Property Tax GIS Project.....



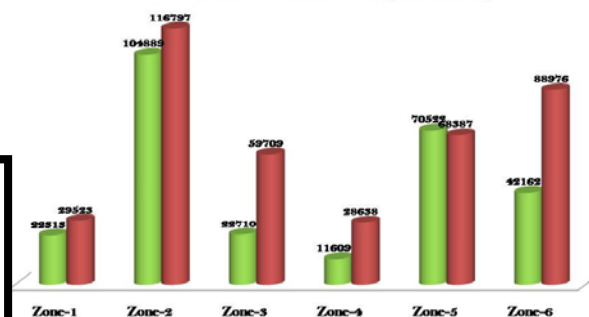
## Properties Added in Tax net After GIS Survey

Till 31/03/2013

Zone	No. of Assessies before GIS survey (Year 2007-08)	No. of Property Assessies after GIS Survey till 31/03/2013	No. of Assessies added after GIS survey
Zone-1	22,313	29,523	7,210
Zone-2	104889	116797	11,908
Zone-3	22,710	59,709	36,999
Zone-4	11,609	28,638	17,029
Zone-5	70,522	68,387	-2,135
Zone-6	42,162	88,976	46,814
<b>Total</b>	<b>2,74,205</b>	<b>3,92,032</b>	<b>1,17,827</b>

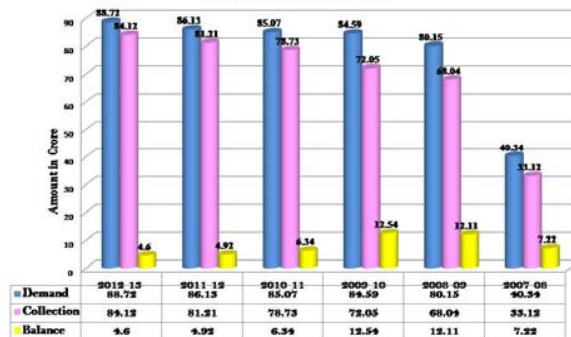
## Properties Added in Tax Net After GIS Survey

■ Total No. of Assessies Before GIS Survey (year 2007-08)  
■ Total No. of Assessies After GIS Survey (till 31.03.2013)



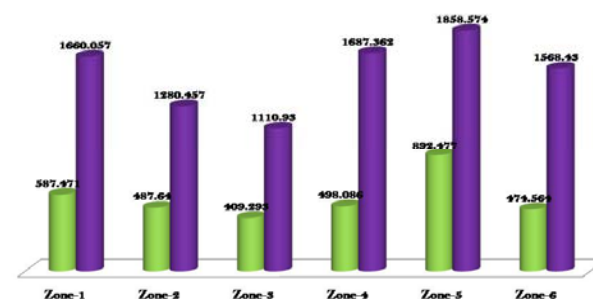
## ADDITIONAL REVENUE GENERATION

Kanpur Nagar Nigam  
Collection Efficiency Graph



## Property Tax Enhancement after GIS Survey till 31.03.2013

■ Annual Tax Demand Before GIS Survey (year 2007-08) in Lac  
■ Annual Tax Demand After GIS Survey (till 31.03.2013) in Lac



## ADDITIONAL REVENUE GENERATION

### Property Tax Enhancement After GIS

Till 31/03/2013

Zone	Annual Tax Demand Before GIS Survey (in Lac) (2007-2008) INR	Proposed Annual Tax Demand After GIS Survey (in lac) till (31/03/13) INR	Difference Tax (in Lac) INR
Zone-1	587.471	1660.057	1072.586
Zone-2	987.690	1280.437	292.747
Zone-3	409.293	1110.930	701.637
Zone-4	498.086	1687.362	1189.276
Zone-5	892.477	1858.574	966.097
Zone-6	474.564	1568.430	1093.866
<b>Total</b>	<b>3349.531</b>	<b>9165.813</b>	<b>5816.279</b>

# First Complete Municipal Project which has Won State /National and International Awards

## U.P. State e-Governance Awards-2009-10

Project has been awarded U.P. State e-Governance Awards-2009-10 in the project category "Government Process Re-engineering" delivered by Sri Anoop Mishra, Chief Secretary Govt. of Uttar Pradesh dated 07.12.2011 at Lucknow.



## Special Achievement in GIS in India (SAG Award) Award

Project has been awarded Special Achievement in GIS in India (SAG Award) Award delivered by Sri Sailesh Mayar, Secretary Science & Earth, Govt. of India dated 08.12.2011 at 12<sup>th</sup> ESRI India User's Conference, New Delhi.



## CSI-Nihilent Award-2011

Project has been awarded CSI-Nihilent Award-2011 in the project category G2C, delivered by Computer Society of India dated 02.12.2011 at Ahmedabad.



## International Special Achievement in GIS Award-2012

Special Achievement in GIS (SAG Award) to recognize the outstanding works with GIS technology among 1,00,000 others all over the world by ESRI International dated 22.07.2012 at ESRI International User Conference at San Diego, USA.



## SKOCH DIGITAL INCLUSION AWARD-2012

KMC Integrated Solid Waste Management Project Waste to Wealth for GIS Based Garbage Collection has been awarded Service Delivery GOLD Award by SKOCH Group dated 18.09.2012 at New Delhi.



## SKOCH "ICT FOR INDIA AWARDS 2010"



KANPUR MUNICIPAL CORPORATION

## Geospatial Excellence Award 2009

A paper was presented at "Map World Forum 2009", organized at Hyderabad in which the project was awarded Geospatial Excellence Award 2009 for "Geospatial Application for Decision Support System in Local Government."



KANPUR MUNICIPAL CORPORATION

## The Indian Geospatial Award 2009

"The Indian Geospatial Award 2009", delivered by Sri T. Ramaswamy, Secretary Department of Science & Technology, Govt. of India, New Delhi. Kanpur Municipal Corporation has been awarded for Utilizing Geospatial Technologies as part of e-Governance initiatives. The Award recognizes the effort in Successful Implementation of Technology, resulting in better revenue generation..



KANPUR MUNICIPAL CORPORATION

KNN has been selected under The Top-100 ICT Projects in INDIA during 2011 & Awarded certificate of Merit for Unique Property Numbering System dated 1<sup>st</sup> Sept., 2011



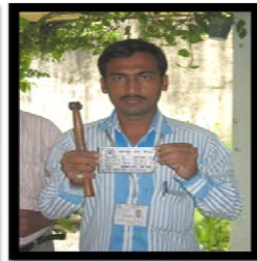


# 5. New Unique Property Numbering System

## Delimitation of Chaks(Blocks)

Before Renumbering		After Renumbering	
Total No. of Zones	06	Total No. of Zones	06
Total No. of wards in each Zones	18 /19	Total No. of wards in each Zones	18 /19
Total No. of Chaks	1272	Total No. of Chaks	408
<ul style="list-style-type: none"> <li>The wards boundaries are divided into several Chaks.</li> <li>Only 1 to 133 chaks No. are numeric rest chaks contain character no like NAN for Nankari area, KLPK for Kalyanpur Kalan area etc.</li> <li>Some Chaks exist in more than one wards.</li> <li>No. of properties existing in each chaks were not uniform, some chaks have contained more than 1000 properties while some chaks have only 10 to 50 properties.</li> <li>Chak boundaries were not clear.</li> </ul>		<ul style="list-style-type: none"> <li>Each ward contained 2 to 6 complete chaks.</li> <li>All chak no. having numeric value from 1 to 408.</li> <li>One Chak exist completely only in one ward.</li> <li>Each chak has contained 1000 to 1500 properties.</li> <li>Chak boundaries are very clear.</li> <li>Old existing numeric chak no. and its boundary remain untouched.</li> </ul>	

## New House Numbering / Building ID Generation System



## Unique Property Numbering- Objective

The objective of the unique property numbering is:-

- to design and assign
- a unique number
- to each property
- with application of modern tool GIS
- which could become a complete address,
- in fact a locator to the property –
- Which in future could become a support system /linked to Aadhaar-UID

## Fixing of House Number Display Board with Old/New House Number, Road Name & Major Landmarks etc.



## Way forward

General Assessment a using GIS-Phase-III with server based working facility

### With Provisions Including:-

- Updation of digital GIS maps with latest World View-2 /Geo Eye multi-spectral satellite imagery 0.41 meter resolution .
- preparation of data for assessment/physical details using contract survey for Municipal Area of Kanpur.



- Development of Server based GIS & Mobile based GIS Applications and its integration with KMC website <http://kmc.up.nic.in>



- Use of GIS map for other municipal activities e.g. locating advertisement boards, Roads under construction, laying of sewer and water lines etc.

- Tenders invited for above activities  
(Last date for submission of tender is 03.05.2013)





# Lessons learnt

- Select a reputed partner as implementing agency
- Joint working to ensure data quality and acceptance of data generated through project
- Ensure and develop quality of manpower employed
- Set Quality Benchmark
- Facilitate and support the the working agency
- Ensure active stake holders participation
- Follow timelines
- Highlight achievements
- Participate in State/National/International Awards



Thank you

