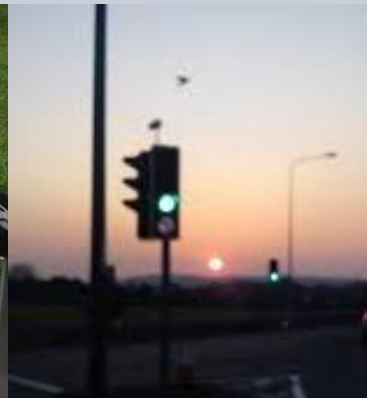
9th Urban Mobility India Conference & Expo 2016
Planning Mobility for City's Sustainability

SERVICE LEVEL BENCHMARK (URBAN TRANSPORT)- PAST, PRESENT AND FUTURE





Objective

- Standardize the procedure which includes methodology for data collection, data analysis, report writing etc
- Validate SLB through actual data collection on ground.
- Help other cities to replicate the process of implementing the SLB.
- Monitor the change in service level of each benchmark over a time of two year

Methodology

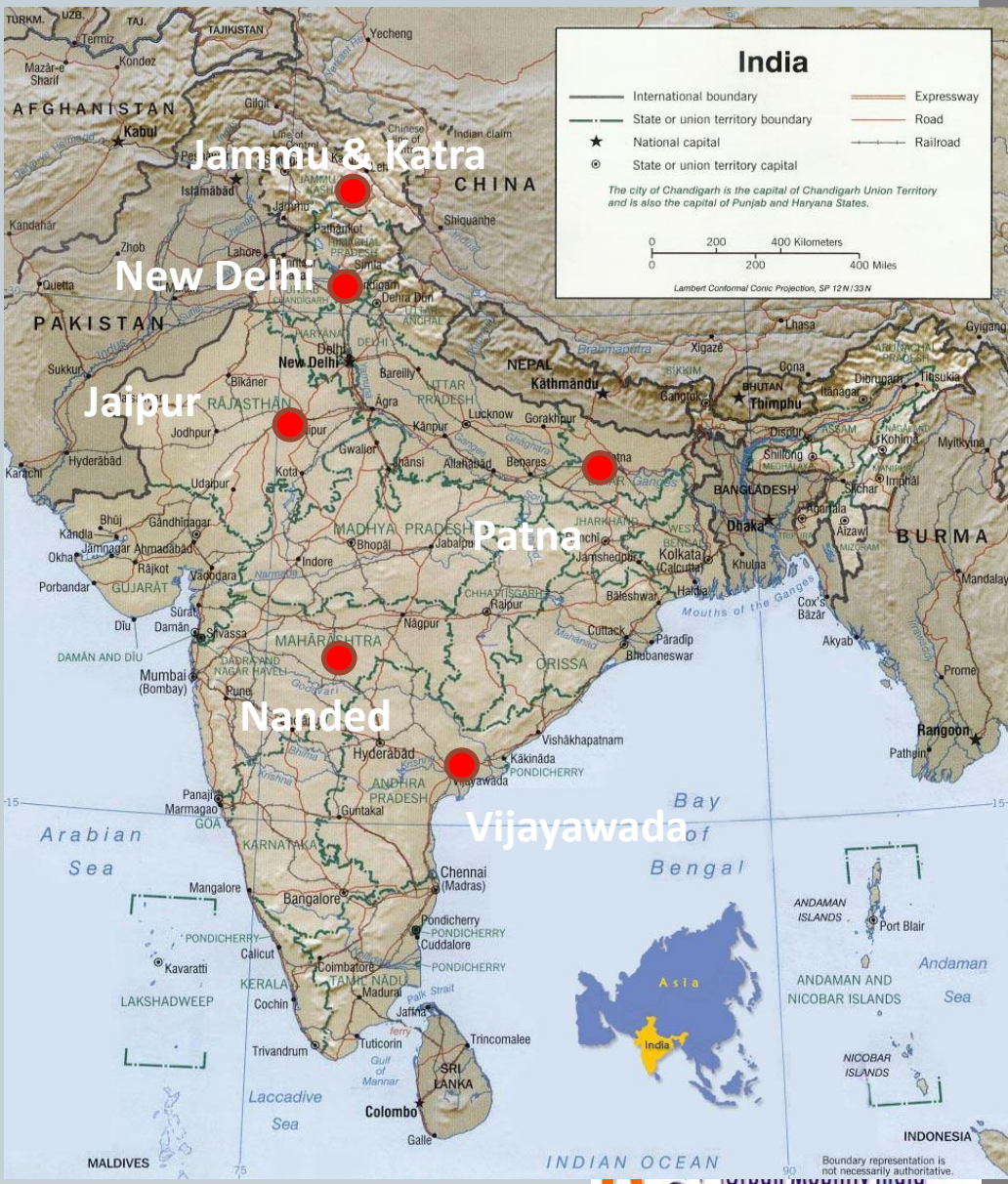
Stage 1

- 1:Establishment of Existing Benchmarks for 6 cities-**Completed**

Stage 2

- 2:Monitoring of Benchmarks for 2 years

Pilot Cities



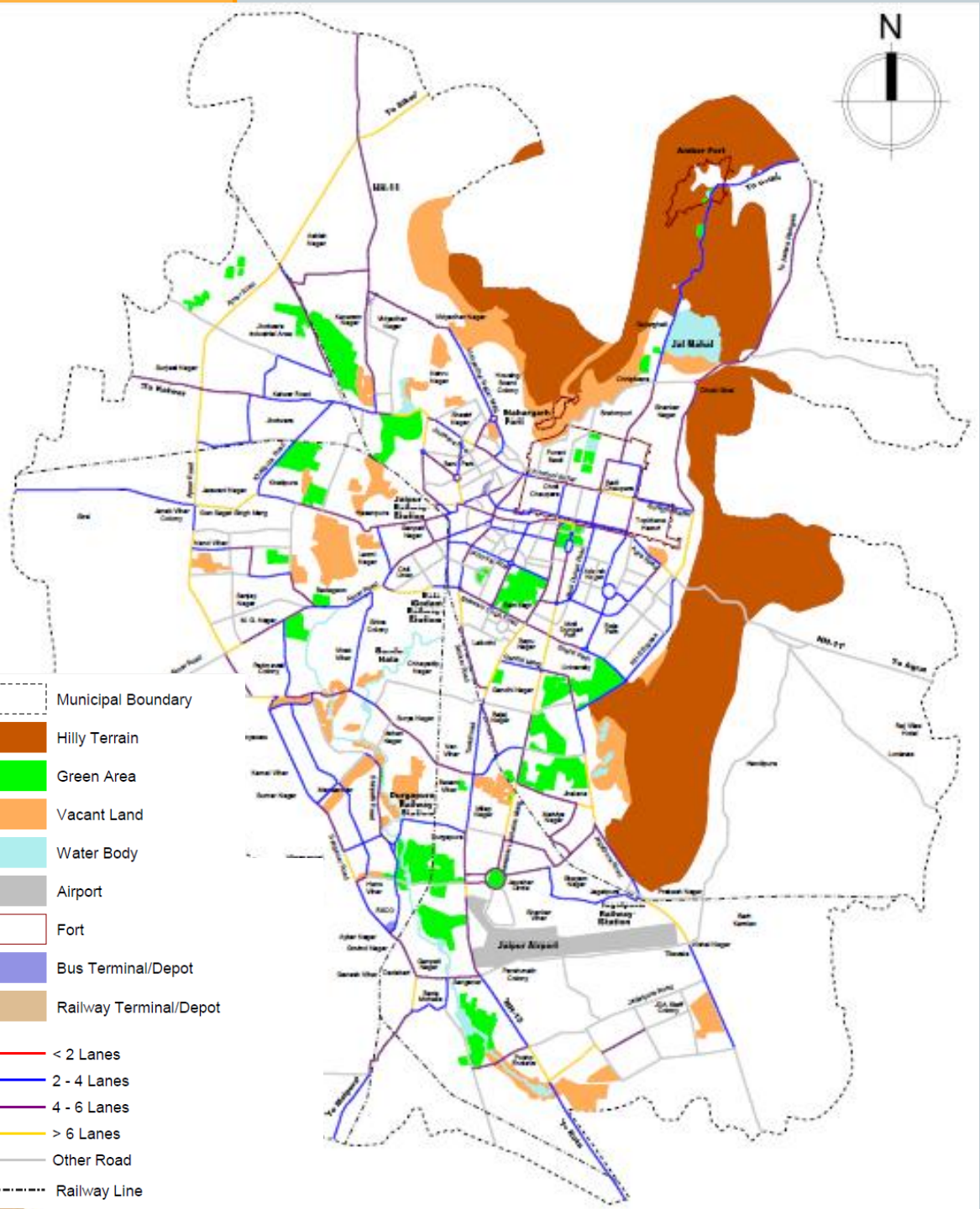
Stage 1- Stakeholder Consultation

- **Sensitization Stage**: Visited all cities and interact with various stakeholders
- **Planning Stage**: national level workshop
- **Analysis Stage**: After the collation and analysis of primary and secondary data
- **Evaluation Stage**: Once the LOS for the parameters and indicators have been estimated
- **Report card and Preparation Stage**: Before the final report card is prepared

Summary Findings - Stage 1

- ***Key Findings*** :
  - **Availability of data is major concern.**
  - Considerable **time** is required for identifying, collecting, compiling and storing the data.
  - Huge Survey Cost
- **Recommendations**
  - ***Data collection cell*** would need to put in place
  - Implementation agency need to be identified

Jaipur



STUDY AREA:

- Jaipur Municipal Corporation (JMC) (288.4 Sq km) and includes walled city area of 6.7 Sq km CBD of the city.

POPULATION:

- 30.73 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Total Road Network - 1500 km

LOS Comparison- Jaipur

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	3	2
2	Pedestrian Infrastructure facilities	3	3
3	Non-Motorized Transport (NMT)facilities	4	3
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	2	2
6	Availability of Parking Spaces	4	3
7	Road Safety	4	3
8	Pollution levels	3	3
9	Integrated Land Use Transport System	3	3
10	Financial Sustainability of Public Transport	3	3

Observation on LOS of Jaipur

Public Transport Facilities

•Number of buses added
•Improvement in Service Coverage

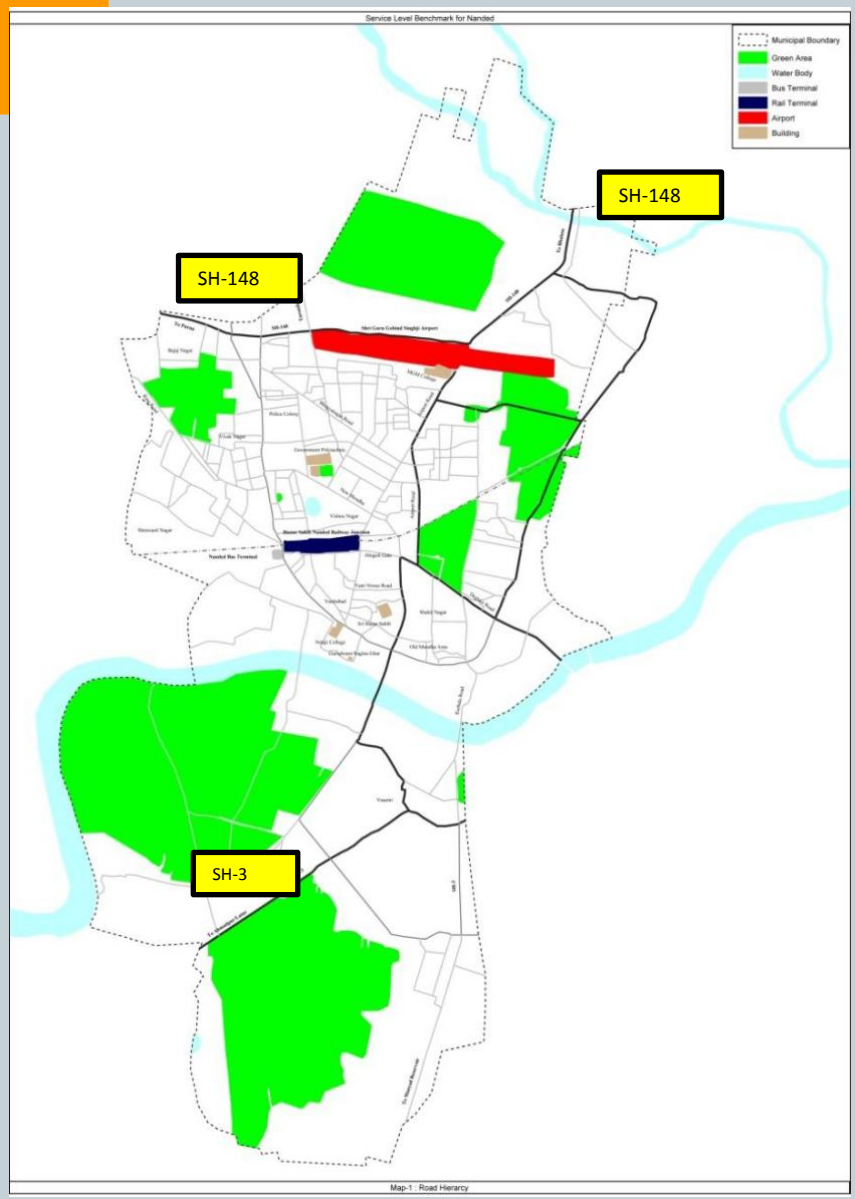
Availability of Parking Space

•Parking spaces has been added
• Time based parking charges has been introduced

Road Safety

•Accidents have increased
• Number of accidents for pedestrians and NMT users have decreased.

Nanded



- An important pilgrim destination with annual tourist flow of over 1 million.
- Second largest urban centers in Marathwada region of Maharashtra.

STUDY AREA:

- Nanded-Waghala City Municipal Corporation (NWCMC) (NWCMC) jurisdiction is 51.76 km2, (5,176.66 Ha)

POPULATION:

- 5.5 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Total Road Network - 450 km.
- Unauthorized parking, hawkers, encroachments and traffic indiscipline

LOS Comparison- Nanded

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	2	2
2	Pedestrian Infrastructure facilities	4	3
3	Non-Motorized Transport (NMT)facilities	1	1
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	2	2
6	Availability of Parking Spaces	4	4
7	Road Safety	3	3
8	Pollution levels	2	3
9	Integrated Land Use Transport System	2	2
10	Financial Sustainability of Public Transport	4	4

Observation on LOS of Nanded

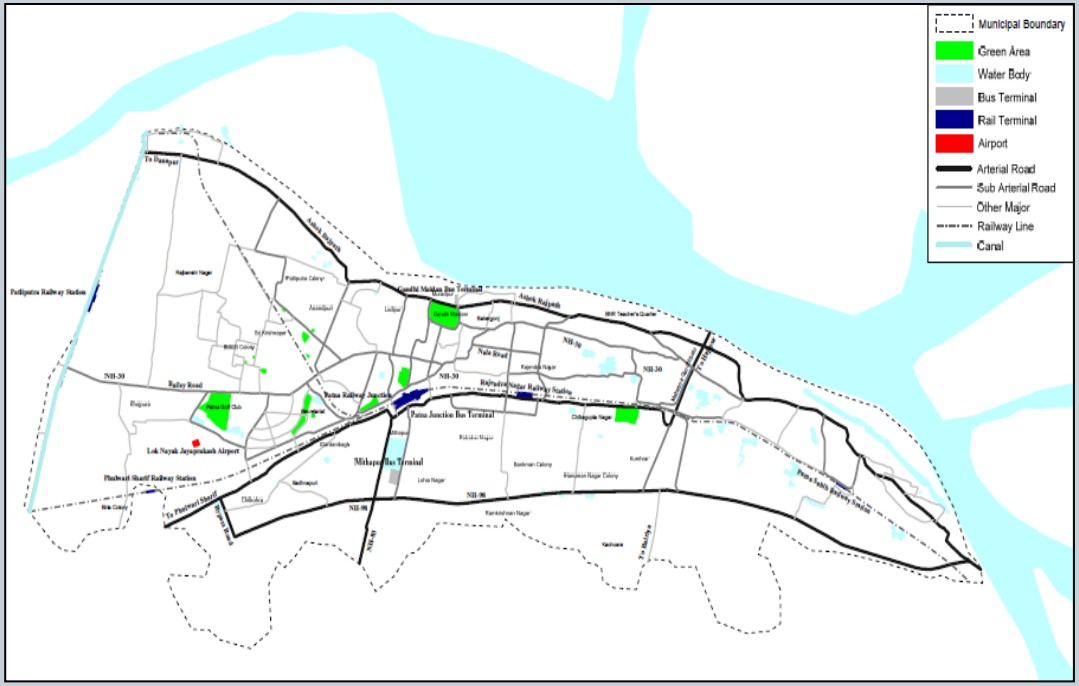
Pedestrian Infrastructure Facilities

- Number of signalised intersection increased

Pollution Levels

- Increase in the levels of NOX and RSPM

Patna



STUDY AREA:

- Patna Municipal Corporation has an extent of 109.22 Sq.Km. and includes 72 wards in it.

POPULATION:

- 16.83 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Total Road Network - 214 km.
- Unauthorized parking, hawkers, encroachments and traffic indiscipline

LOS Comparison- Patna

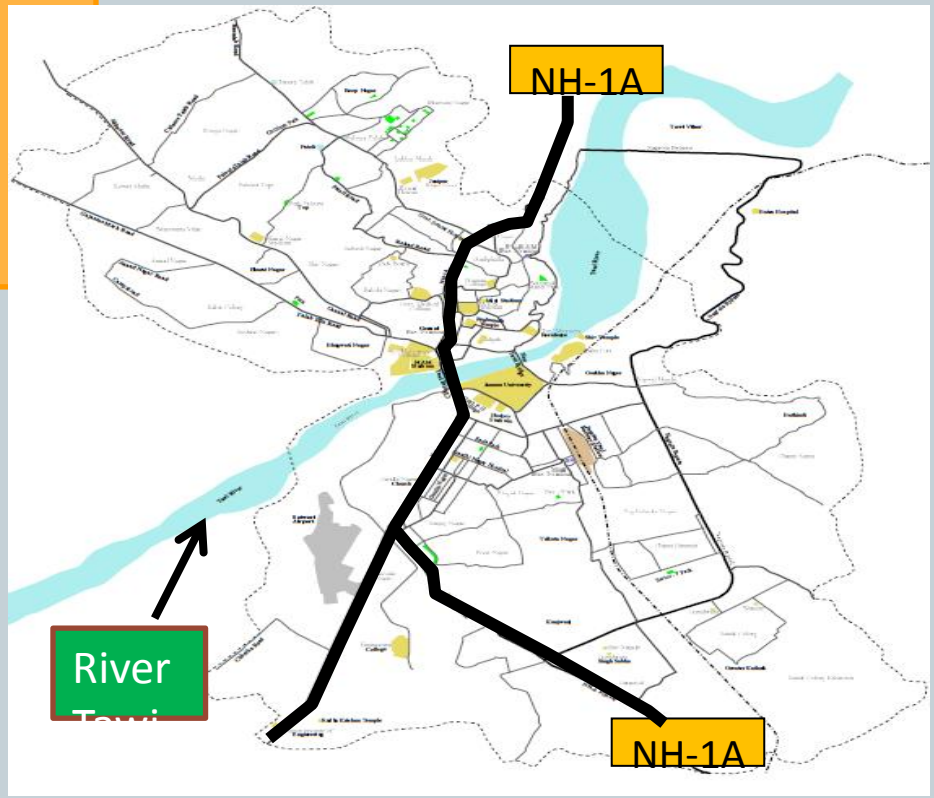
S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	3	3
2	Pedestrian Infrastructure facilities	4	4
3	Non-Motorized Transport (NMT)facilities	3	3
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	3	3
6	Availability of Parking Spaces	4	4
7	Road Safety	4	4
8	Pollution levels	3	3
9	Integrated Land Use Transport System	3	3
10	Financial Sustainability of Public Transport	3	3

Observation on LOS of Patna

Public Transport Facilities

- Discontinuation of services by STU.
- Introduction of Minibuses by RTO.

Jammu- Katra



JAMMU -STUDY AREA:

- It includes Jammu Municipal Corporation (JMC) which extends over 143.52 sq. km.

POPULATION:

- 5.03 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Total Road Network - 140 km.
- Unauthorized parking, encroachments and traffic indiscipline.

KATRA –STUDY AREA

- It includes Katra Municipal Corporation (KMC) which extends has 3 sq. km.

POPULATION:

- 0.01 million as per 2011 census

LOS Comparison- Jammu- No change

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	4	4
2	Pedestrian Infrastructure facilities	4	4
3	Non-Motorized Transport (NMT)facilities	4	4
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	4	4
6	Availability of Parking Spaces	4	4
7	Road Safety	3	3
8	Pollution levels	4	4
9	Integrated Land Use Transport System	3	3
10	Financial Sustainability of Public Transport	4	4

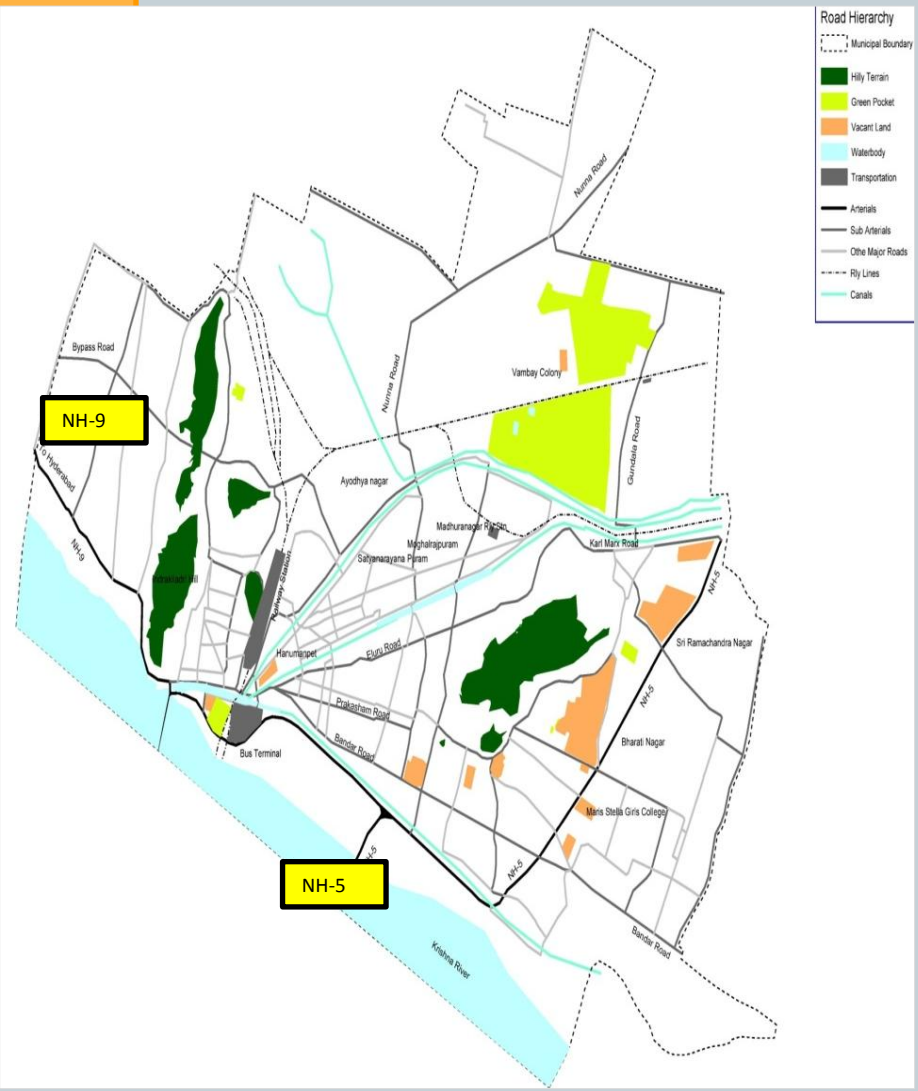
LOS Comparison- Katra- No Change

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	4	4
2	Pedestrian Infrastructure facilities	4	4
3	Non-Motorized Transport (NMT)facilities	4	4
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	4	4
6	Availability of Parking Spaces	4	4
7	Road Safety	3	3
8	Pollution levels	4	4
9	Integrated Land Use Transport System	3	3
10	Financial Sustainability of Public Transport	4	4

Observation on LOS of Jammu-Katra

- No proper public transport system.
- No change has been observed in any of the indicators

Vijayawada



STUDY AREA:

- Vijayawada Municipal Corporation (VMC) extends over an area of 61.88 sq. km.

POPULATION:

- 10.48 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Total Road Network -92 km (as per Master Plan, 2006).
- Unauthorized parking, hawkers, encroachments and traffic indiscipline

LOS Comparison- Vijayawada

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	2	2
2	Pedestrian Infrastructure facilities	3	3
3	Non-Motorized Transport (NMT)facilities	3	3
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	2	2
6	Availability of Parking Spaces	4	4
7	Road Safety	3	4
8	Pollution levels	2	3
9	Integrated Land Use Transport System	3	3
10	Financial Sustainability of Public Transport	2	3

Observation on LOS of Vijayawada

Road Safety

- Road Fatalities have increased
- Increase in number of pedestrian and NMT users death.

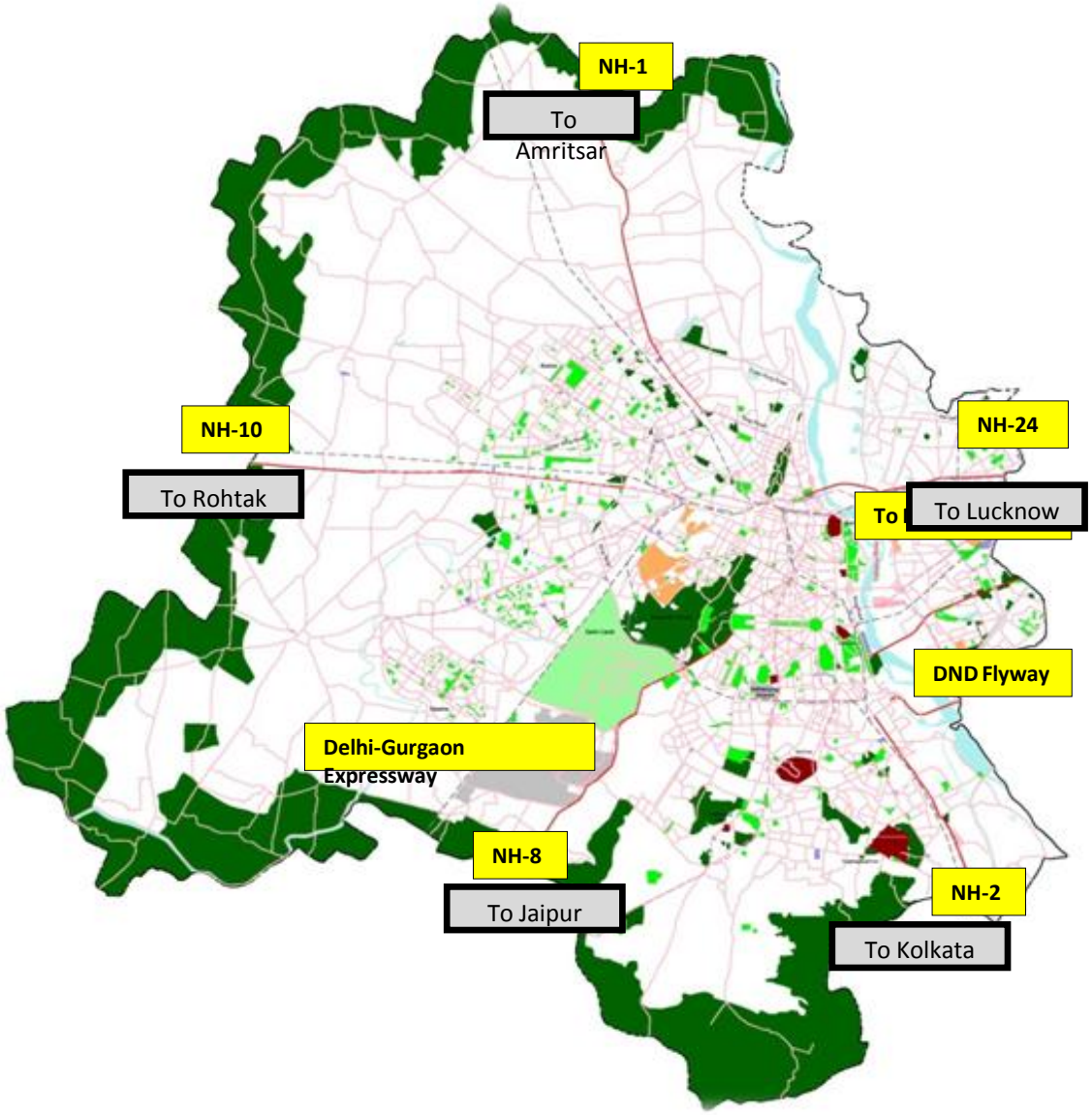
Pollution

- Levels of NOX and RSPM have increased

Financial Sustainability of Public Transport

- Staff per bus per ratio have increased from 5.01 to 6.17

Delhi



STUDY AREA:

- Delhi (National Catptal Territory – NCT) is spread over an area of 1483 sq km.

POPULATION:

- 168 Lakhs as per 2011 census

ROAD INFRASTRUCTURE:

- Road Network of **31,373 km** (2008-09).
- Road density of **21.13 km per sq km**

LOS Comparison- Delhi

S. No.	Service Level Benchmark	Overall LOS for Stage - I	LOS Achieved - MY – I
1	Public Transport facilities	1	1
2	Pedestrian Infrastructure facilities	2	2
3	Non-Motorized Transport (NMT)facilities	2	2
4	Level of usage of Integrated Transport System (ITS) facilities	4	4
5	Travel speed (Motorized and Mass Transit) along major corridors	3	3
6	Availability of Parking Spaces	4	4
7	Road Safety	4	4
8	Pollution levels	3	4
9	Integrated Land Use Transport System	2	2
10	Financial Sustainability of Public Transport	3	3

Observation on LOS of Delhi

Public Transport Facilities

- Number of buses have been decreased
- Increase in metro network

Pollution

- Levels of NOX and RSPM have increased ,

Planning Mobility for City's Sustainability

Overall LOS Comparison

	Delhi		Jaipur		Jammu		Katra		Nanded		Patna		Vijayawada	
	Stage 1	MY - I	Stage 1	MY - I	Stage 1	MY - I	Stage 1	MY - I	Stage 1	MY - I	Stage 1	MY - I	Stage 1	MY - I
Public Transport Facilities	1	1	3	2	4	4	4	4	2	2	3	3	2	2
Pedestrian Infrastructure Facilities	2	2	3	3	4	4	4	4	4	3	4	4	3	3
NMT Facilities	2	2	4	3	4	4	4	4	1	1	3	3	3	3
Level of Usage of ITS Facilities	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Travel Speeds	3	3	2	2	4	4	4	4	2	2	3	3	2	2
Availability of Parking Spaces	4	4	4	3	4	4	4	4	4	4	4	4	4	4
Road Safety	4	4	4	3	4	3	3	3	3	3	4	4	3	4
Pollution Levels	3	4	3	3	4	4	4	4	2	3	3	3	2	3
Integrated Land Use Transport System	2	2	3	3	3	3	3	3	2	2	3	3	3	3
Financial Sustainability for Buses	3	3	3	3	4	4	4	4	4	4	3	3	2	3

Action Plan

Service Level Benchmark	Action Plan to Achieve the target
Public Transport facilities	Procuring an additional buses and Subsequently, increase the frequency and coverage
Pedestrian Infrastructure facilities	Construct footpath , Install pedestrian signals, Install Streetlights
NMT facilities	Construct dedicated NMT track and NMT parking spaces at interchanges
Level of usage of ITS facilities	Install ITS facilities such as PIS, CCTV, GPS etc and control centre
Travel speed	Traffic management measures such as on-street parking control, Synchronized traffic etc
Availability of Parking Spaces	Introducing paid parking around bus stand, and other commercial areas.
Road Safety	Identify black-spots., introduce traffic calming measures in accident prone areas – e.g. speed humps, curb extensions, living streets, etc..
Pollution levels	Induction of clean fuel (eg: Compressed Natural Gas)
Integrated Land Use Transport System	Ensure planning and regulations along key public transit corridors encourage mixed land use, and higher density development.
Financial Sustainability of Public Transport	Identifying alternative revenue generation sources

Conclusion

Issues

- Collection of Data
- No responsible authority
- Lack of Awareness

Areas of Attention Required

- ITS
- Availability of parking space
- Pedestrian Infrastructure and NMT facilities
- Public transport

Awareness
Implementation Agency
Data Collection Cell

Thank You