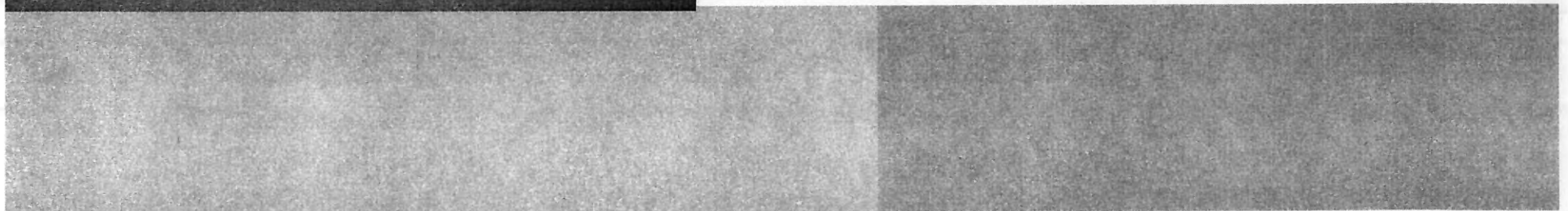


Urban Mass Transit
Company Limited



Comprehensive Mobility Plan

Agra



Comprehensive Mobility Plan

CMP

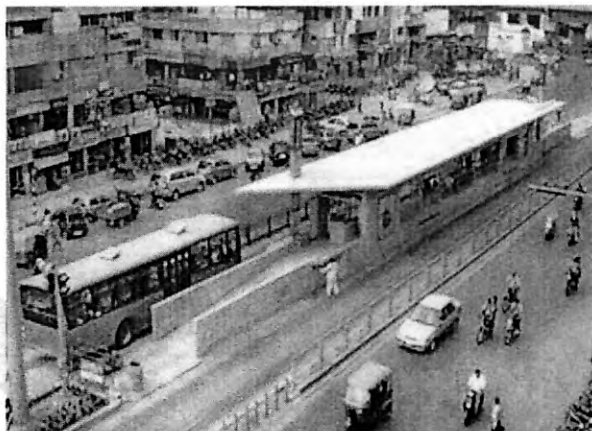
Strategic document to achieve the desirable mobility in a sustainable and cost effective manner

Includes

- Changing behavior and travel habits
- Priority to Public Transport, IPT, NMT and pedestrians
- Land use Transport Integration

Larger Outcomes:

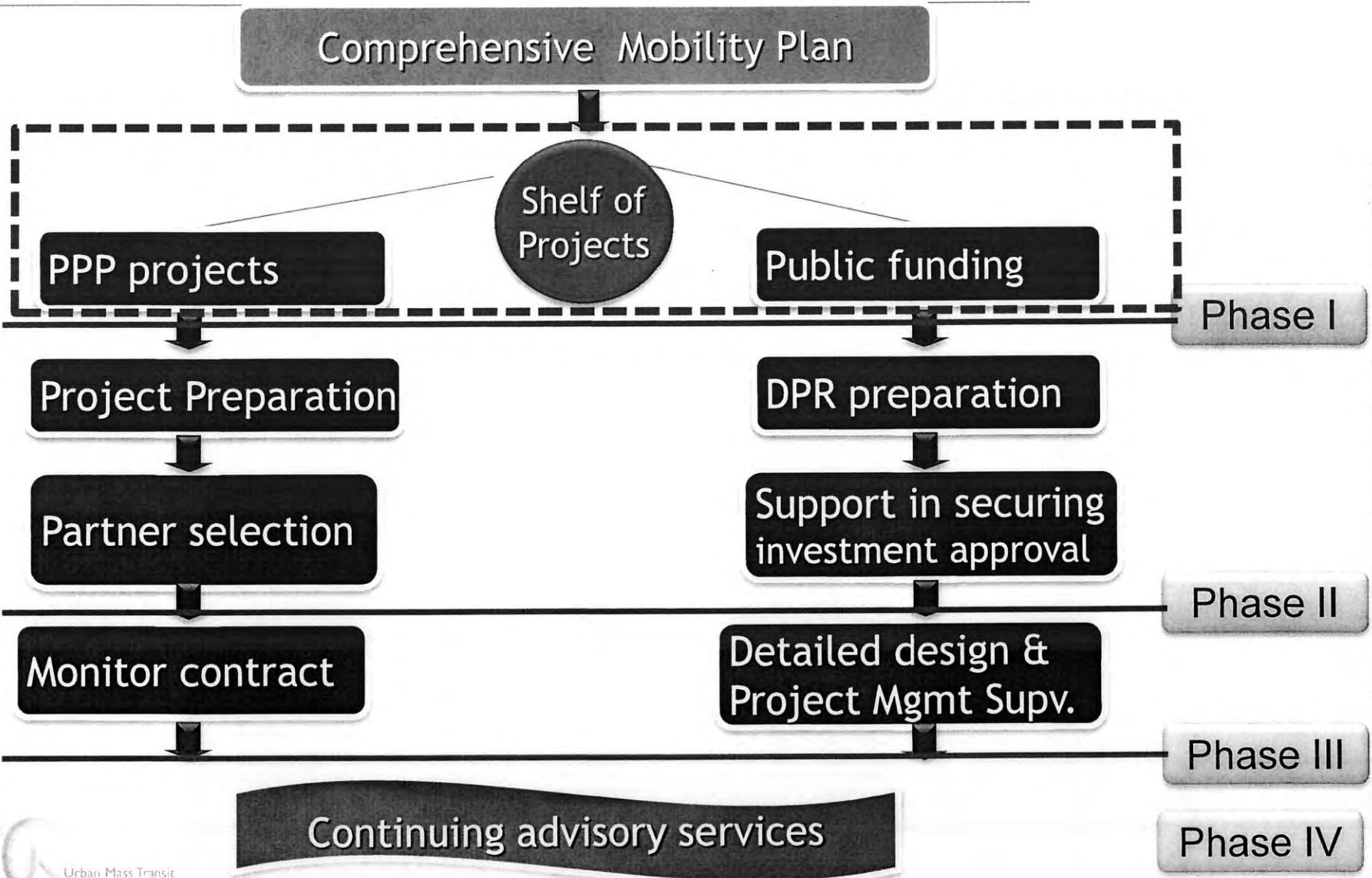
- Congestion relief
- Improved safety
- Improved air quality
- Improved quality of life
- Improved opportunities for economic development



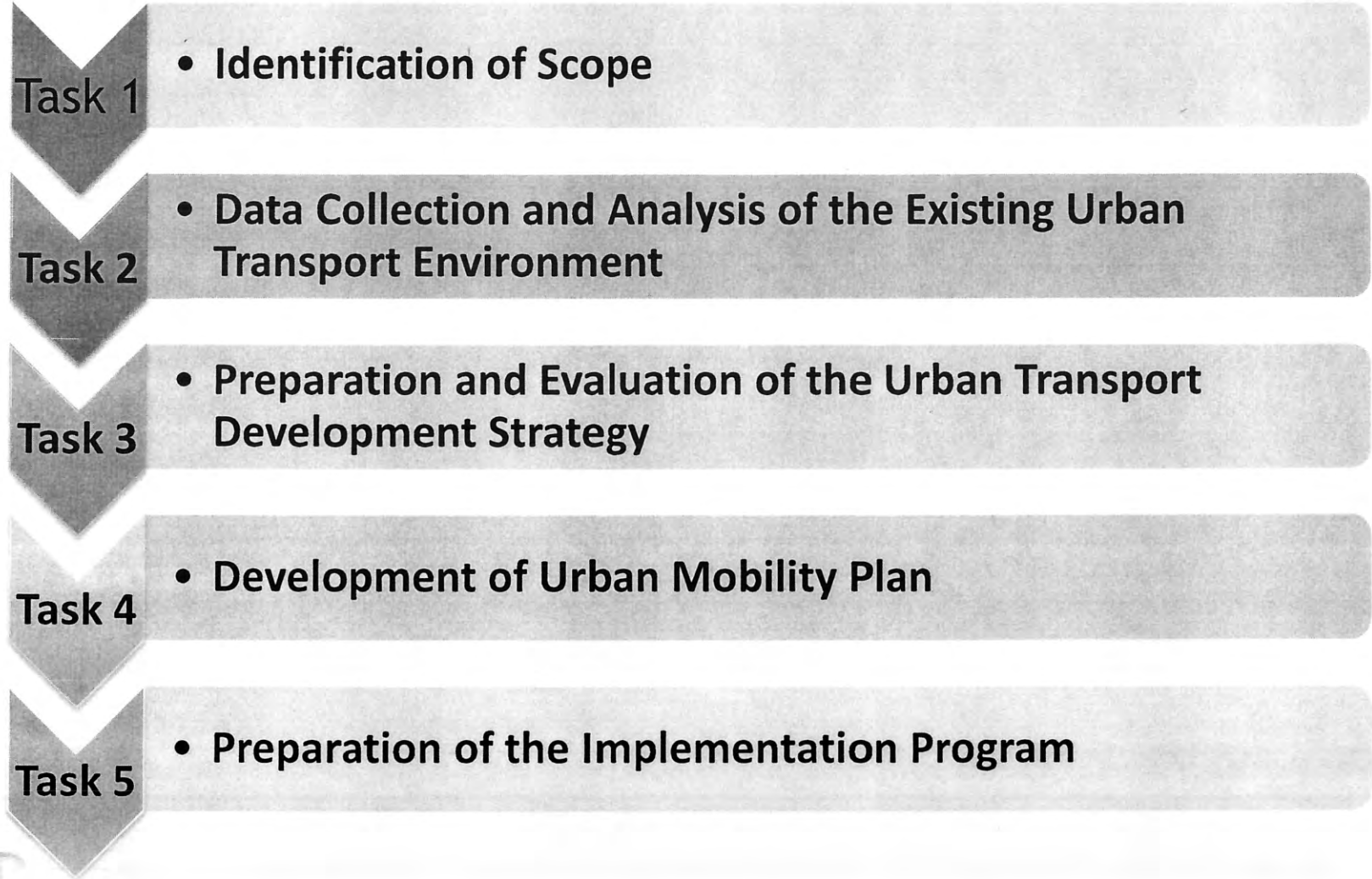
Vision of NUTP

To make cities more livable and enable them to become the “engines of economic growth”.

CMP in a Project Cycle



Key CMP Tasks



Stakeholder Consultation

GoUP, Lucknow

- 9th September 2011, Meeting Chaired by Commissioner IIDC
- 14th June 2011, Meeting Chaired by Commissioner IIDC

Lucknow

- 25th March 2011, meeting chaired by Divisional Commissioner

Kanpur

- 4th August 2010, meeting chaired by Divisional Commissioner

- 15th March 2011, meeting chaired by Divisional Commissioner

Agra

- 24th February, 2011, meeting chaired by Divisional Commissioner

- 11th May 2011, meeting chaired by District Magistrate

- 9th August 2011, meeting chaired by Municipal Commissioner

Mathura

- 21st November 2011, meeting chaired by District Magistrate

Meerut

- 11 March 2011, meeting chaired by Divisional Commissioner

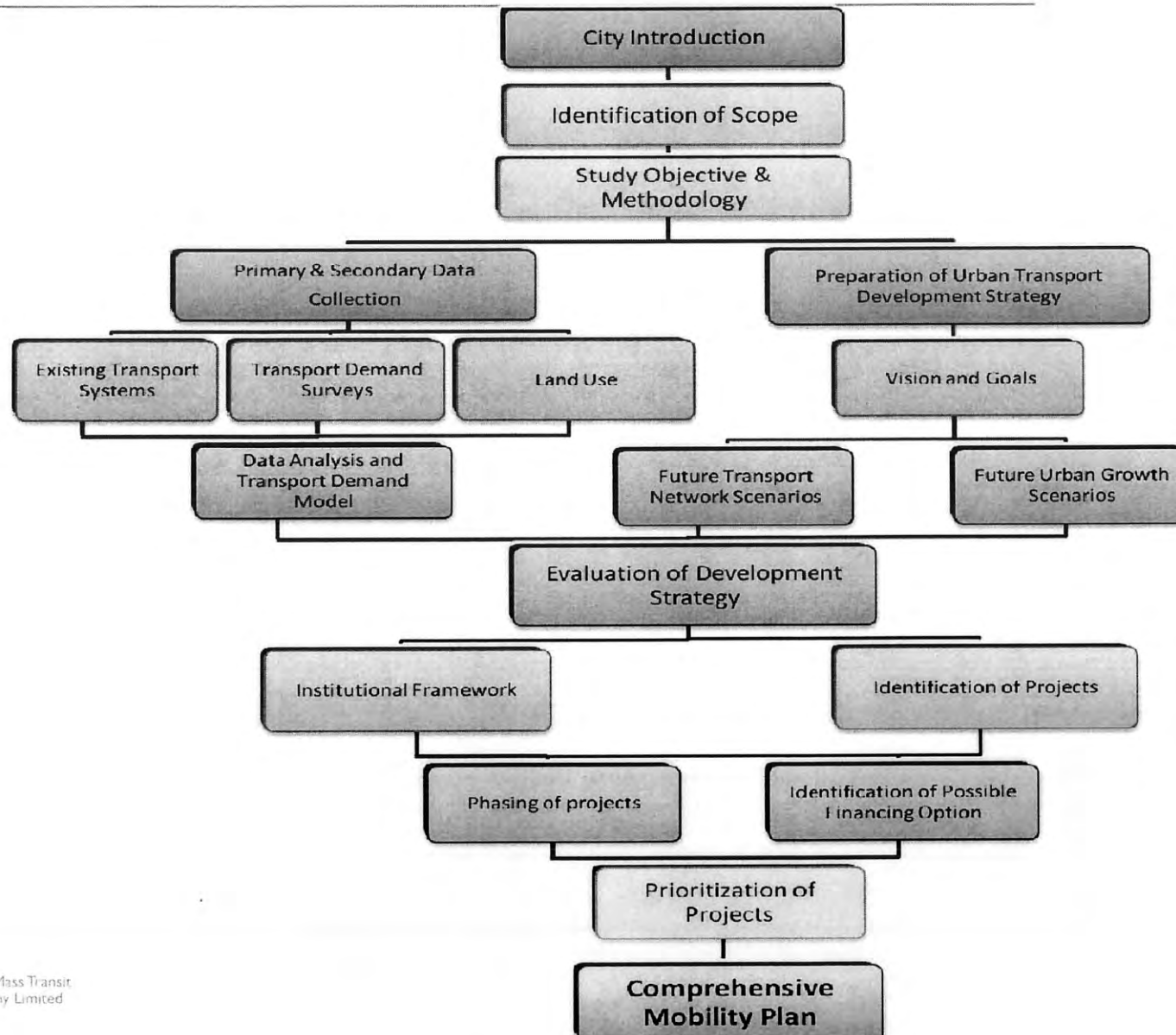
Stakeholder Consultation

During the course of the study, various stakeholders were consulted from different departments as listed below:

- Divisional Commissioner
- Agra Nagar Nigam
- Agra Development Authority
- Regional Transport Authority
- Uttar Pradesh Tourism
- Uttar Pradesh State Road Transport Corporation
- Traffic Police
- NGO
- Public Works Department

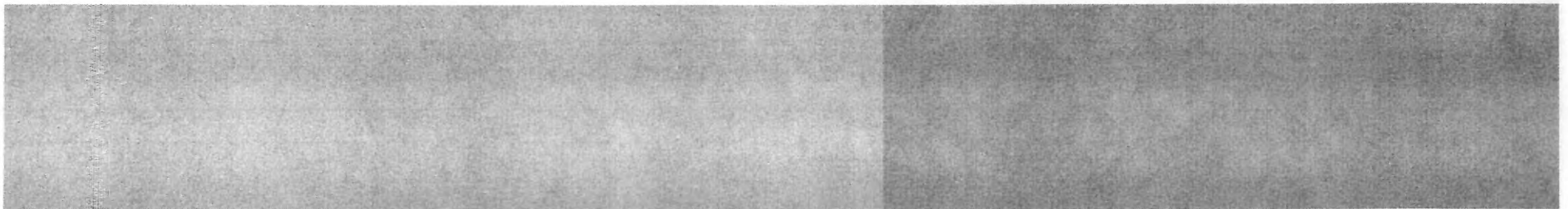


Methodology

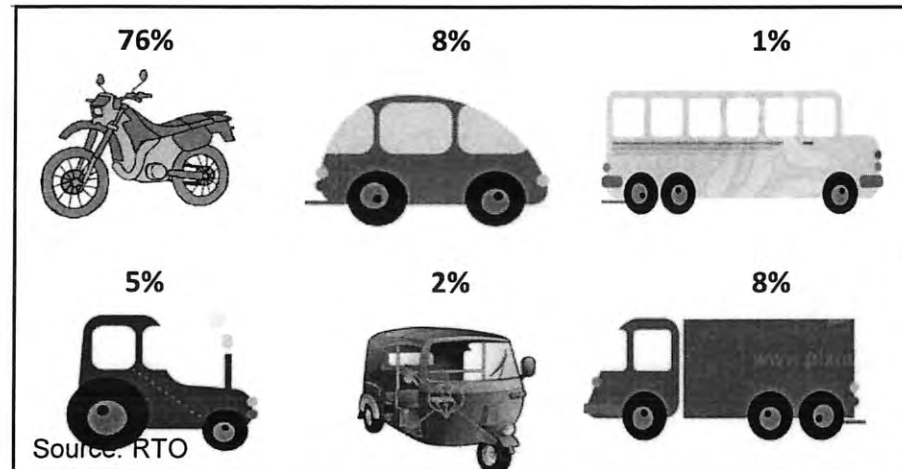




City Profile

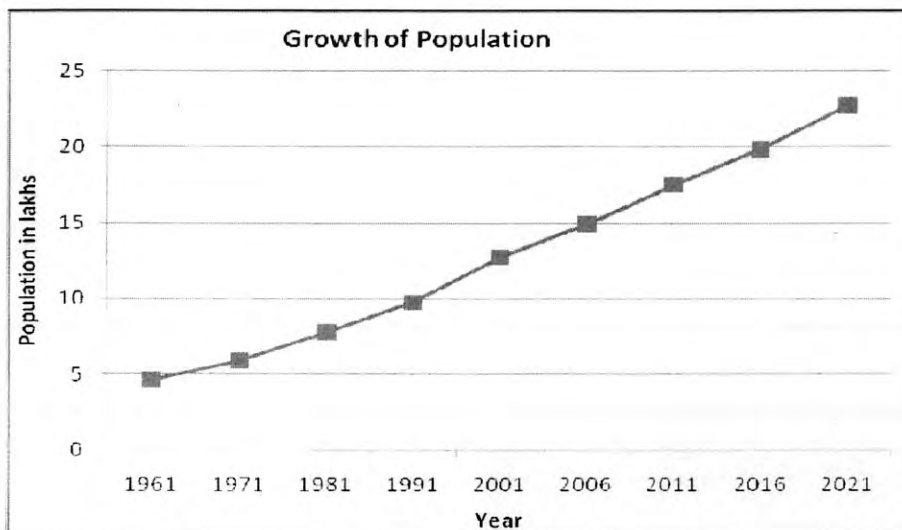
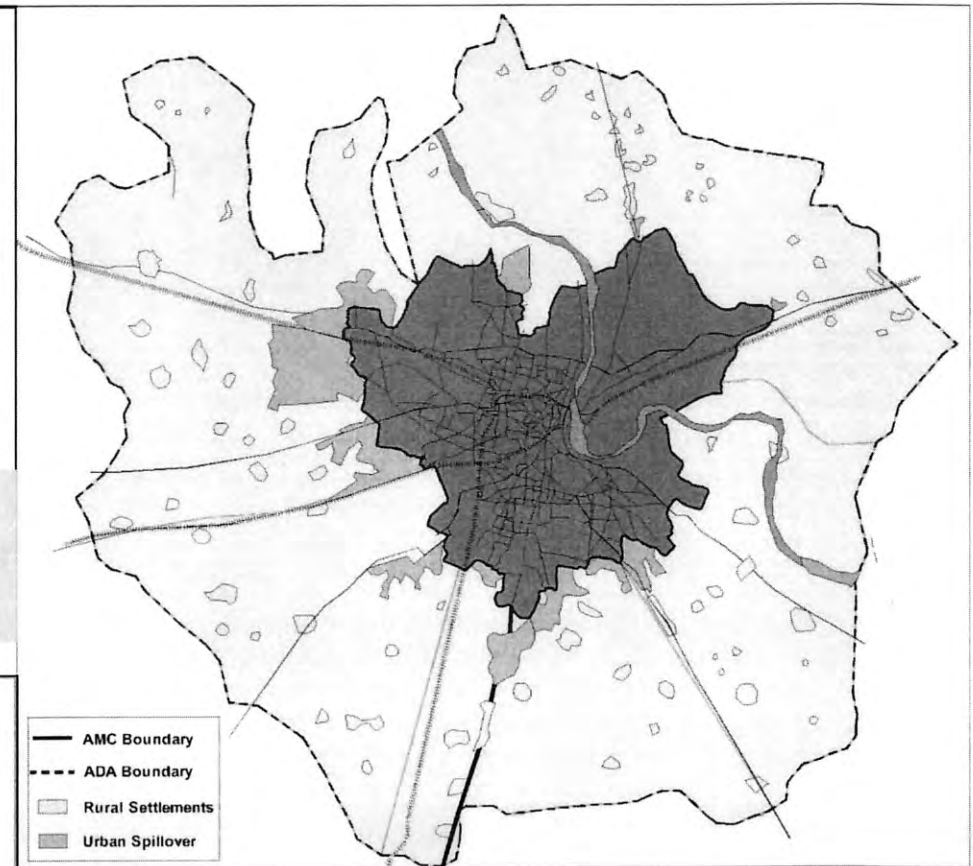


Overview of City



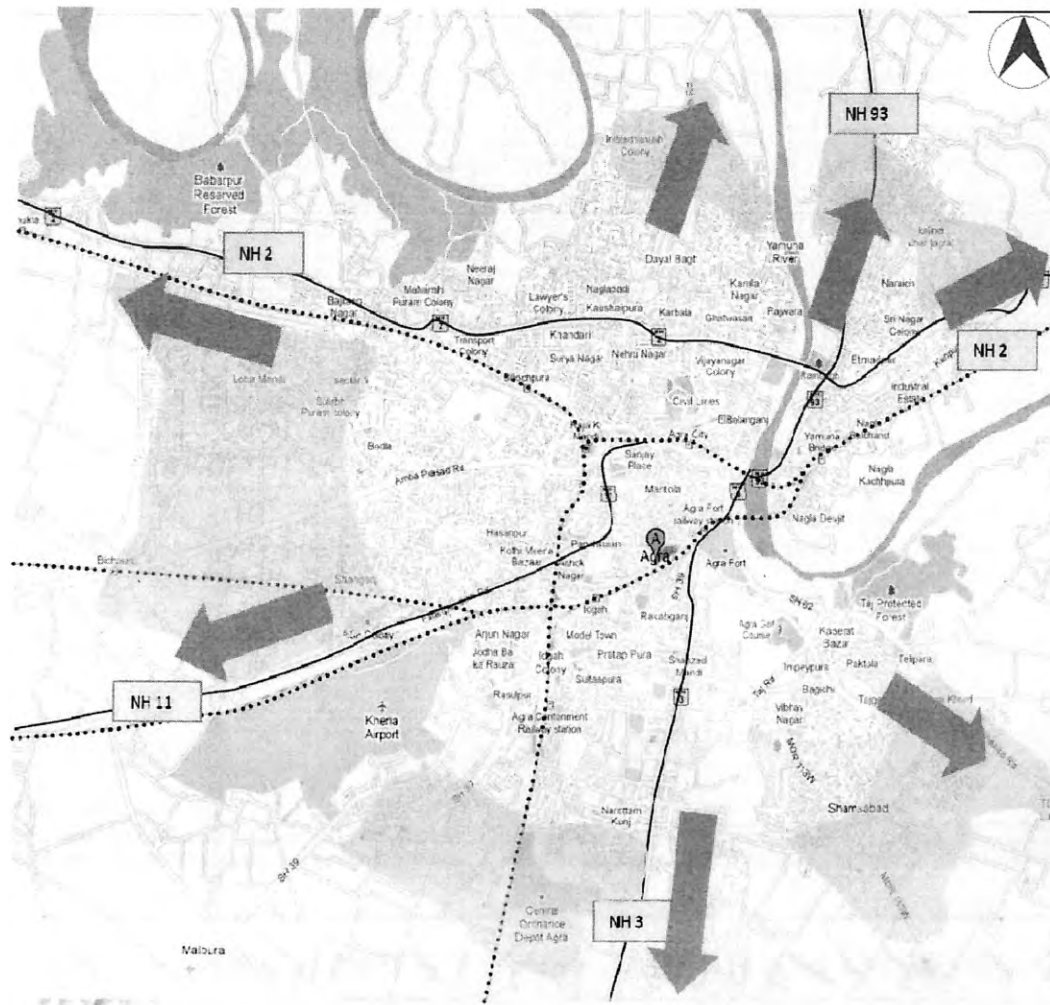
Study Area

Agra Development Authority – 520 sq.km
 Agra Nagar Nigam - 141 sq.km



Population density - 9,000 persons per sq. km.
 Decadal Population Growth Rate- 30.37 %
 ATL – 4.9 km
 Area under Traffic and Transportation – 10%

Existing Scenario



Land use

- Urban sprawl has taken place in all directions.
- Thrust has been observed in urbanization of the West & South

Regional Connectivity

- Good network of highways radiating outwards, however, absence of a ring road connectivity to link peripheral areas
- NH-2- to Delhi in north direction and to Kolkata via Kanpur towards East.
- NH-11- to Jaipur
- NH-3- to Mumbai
- NH-93- Aligarh

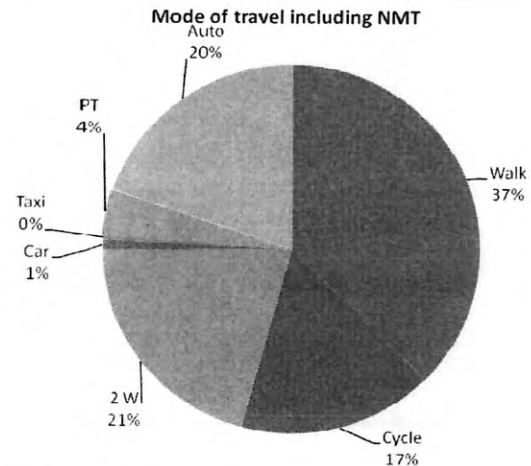
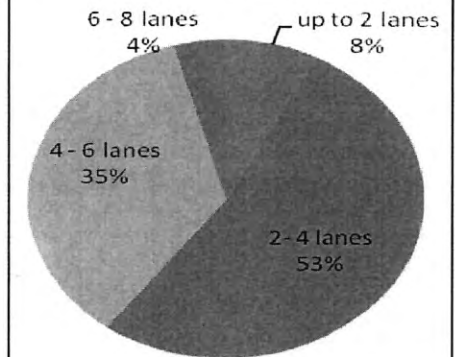
Transport System – Existing Scenario



Road Network

- 2-lane carriageway - 52%
- Undivided carriageway - 77%
- Road markings - absent on 87% of the network

Type of Carriage Width (%)



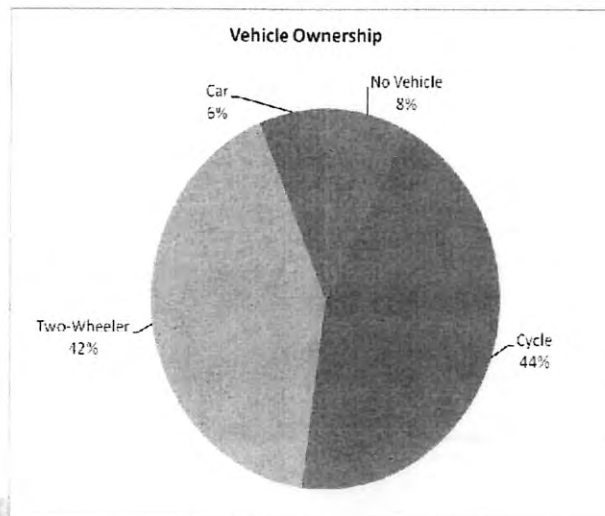
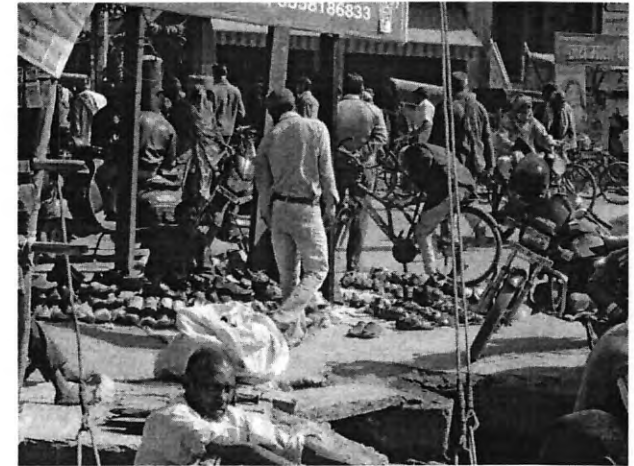
Public Transport

- Public transport needs to be re organized
- Enforcement on dedicated routes of operation for 3-wheeler and Vikram
- Average daily utilization -100 kms
- Pubic Transport share - 4%

Existing Scenario

NMT

- Development of footpaths and suitable street furniture is required on major roads of the city
- Absence of pedestrian crossing facilities on almost all intersections
- Highest pedestrian movement - Dayalbagh, Redfort and St Johns



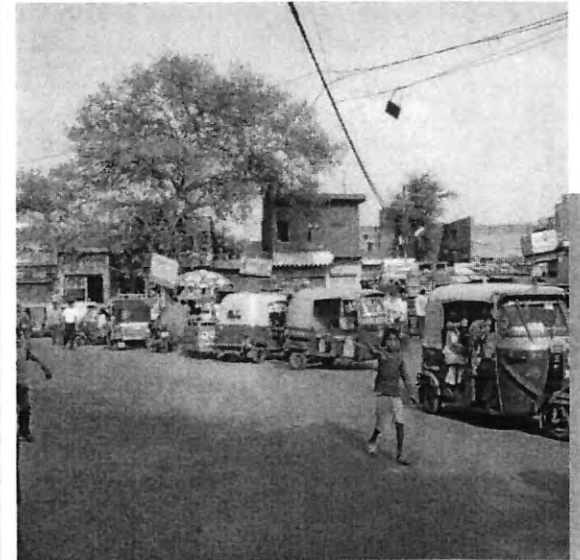
Traffic Congestion

- Major Congested roads are MG road, By pass Road and NH 2
- Enforcement of traffic rules is a major focus area that needs attention
- Overall network has average journey speed less than even 16 kmph.

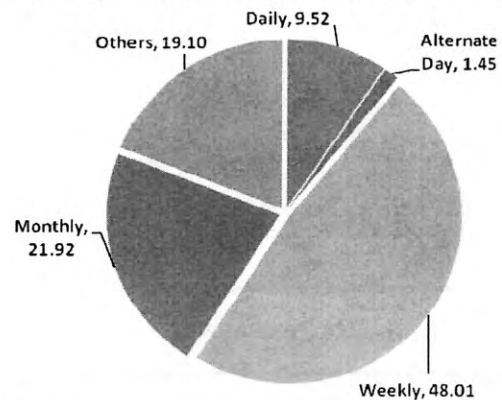
Existing Scenario

- **Parking**

- On street parking at MG road reducing availability of Carriage width
- High parking demand at Loha Mandi, Shahgang, Bodla, Dayalbagh, Sanjay Place resulting in heavy congestion through out the day
- Unorganized parking outside major tourist attraction areas like Red fort, Dayalbagh



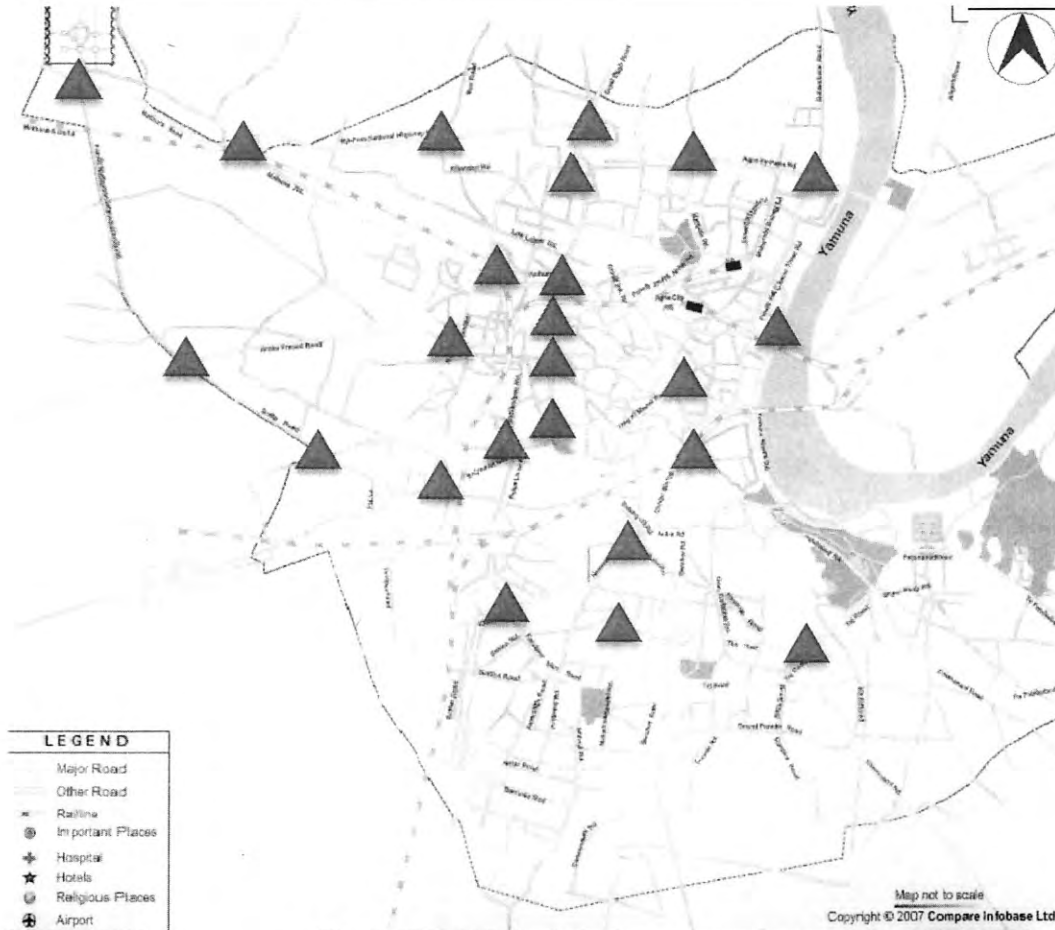
Average Trip Frequency of Goods Vehicles(%)



Freight System

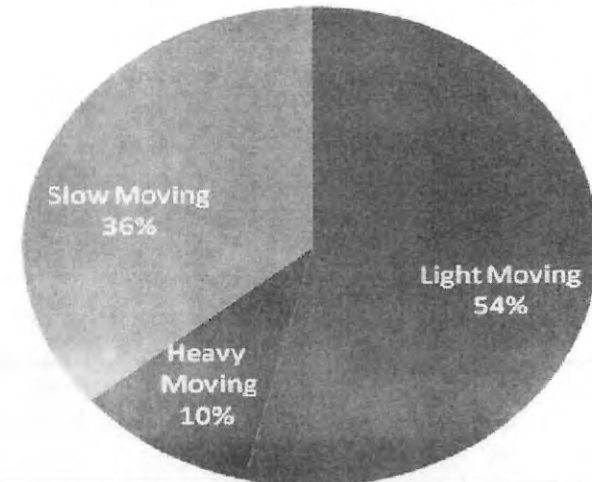
- 3 Terminals - Hing ki Mandi, Belanganj and Petha Mandi - located in the heart of the city

Critical Intersections- Key Issues



- Encroachment on Footpath
- Poor Junction Design, On Street Parking
- Un regulated Traffic
- Absence / Synchronization of intersections
- Lack of Enforcement, Signages, Road Markings, and Non availability of Pedestrian crossings.

Traffic Composition (PCU)

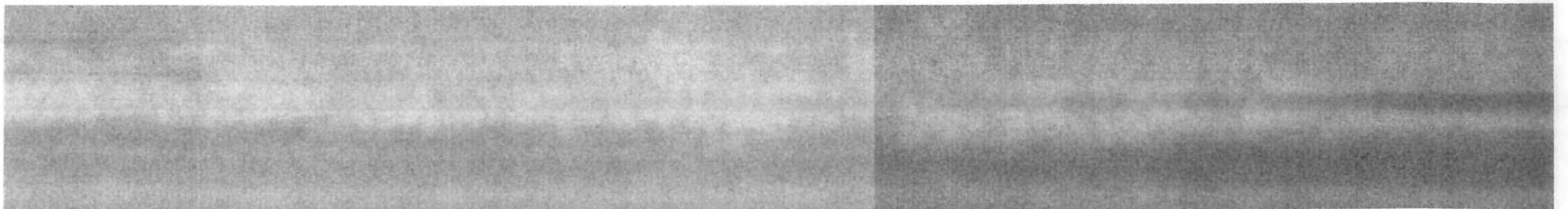


Existing Level of Service

Overall LOS			
	Indicators	LOS - Existing	Desired LOS
A	Overall Public Transport facilities City wide	3	1
B	Overall Pedestrian Infrastructure Facilities	3	1
C	Overall NMT Facilities	4	1
D	Level of usage of ITS facilities	4	2
E	Travel Speed along major corridors	3	2
F	Availability of Parking Spaces	4	2
G	Road Safety	4	1
H	Pollution Levels	2	1
I	Integrated Land-use Transport Integration	3	1
J	Financial Sustainability of Public transport	3	2



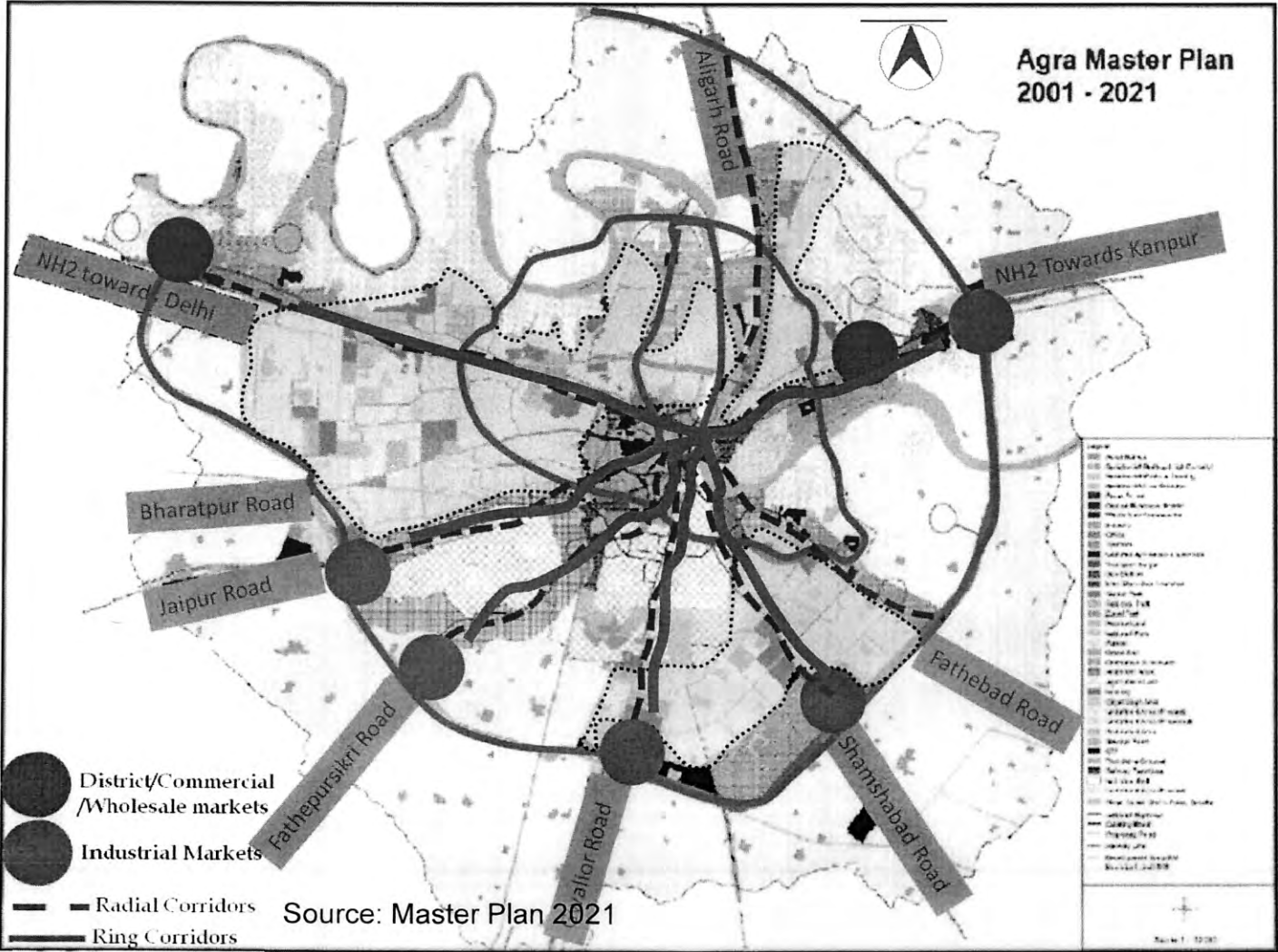
Key Interventions



Major Proposals

- 1. Mobility Corridors**
- 2. Public Transport Plan**
- 3. Non-Motorized Transport Plan**
- 4. Tourist Management Plan**
- 5. Freight Management Plan**
- 6. Immediate Improvement Measures**

Land Use Transport Integration



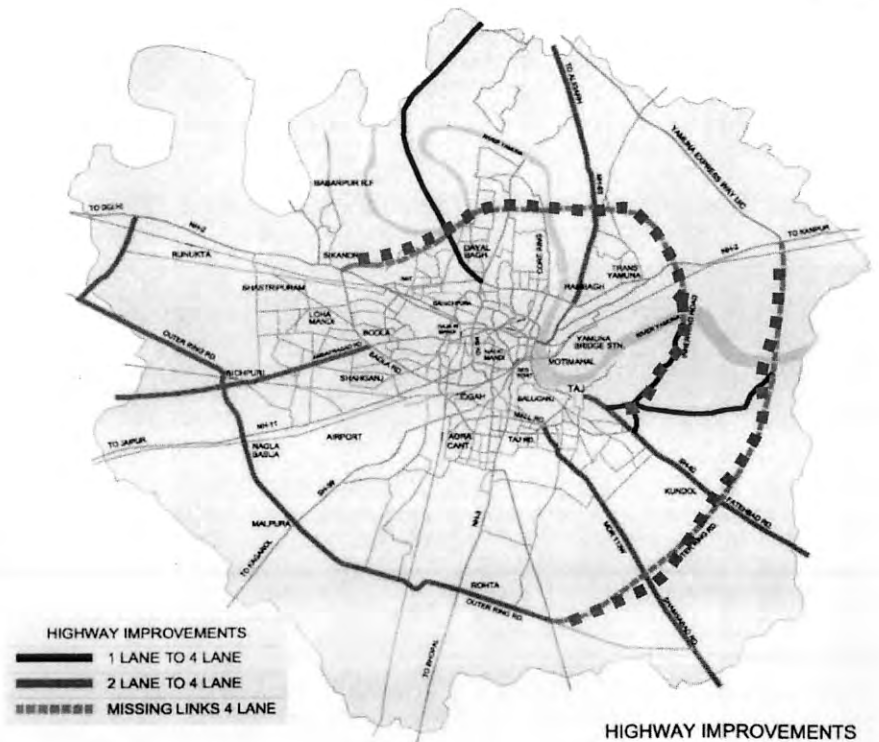
- Accessibility within ADA
- Connectivity to the new growth centres
- Development of areas near arterials
- Radial network complemented by circumferential roadway system.

Mobility Corridor



- Missing links identified - 32km
- Orbital 2- (Sikandra to SH-42 (River Yamuna) via Dayalbagh- 13km
- Orbital 3- Outer Ring Road - 19 km

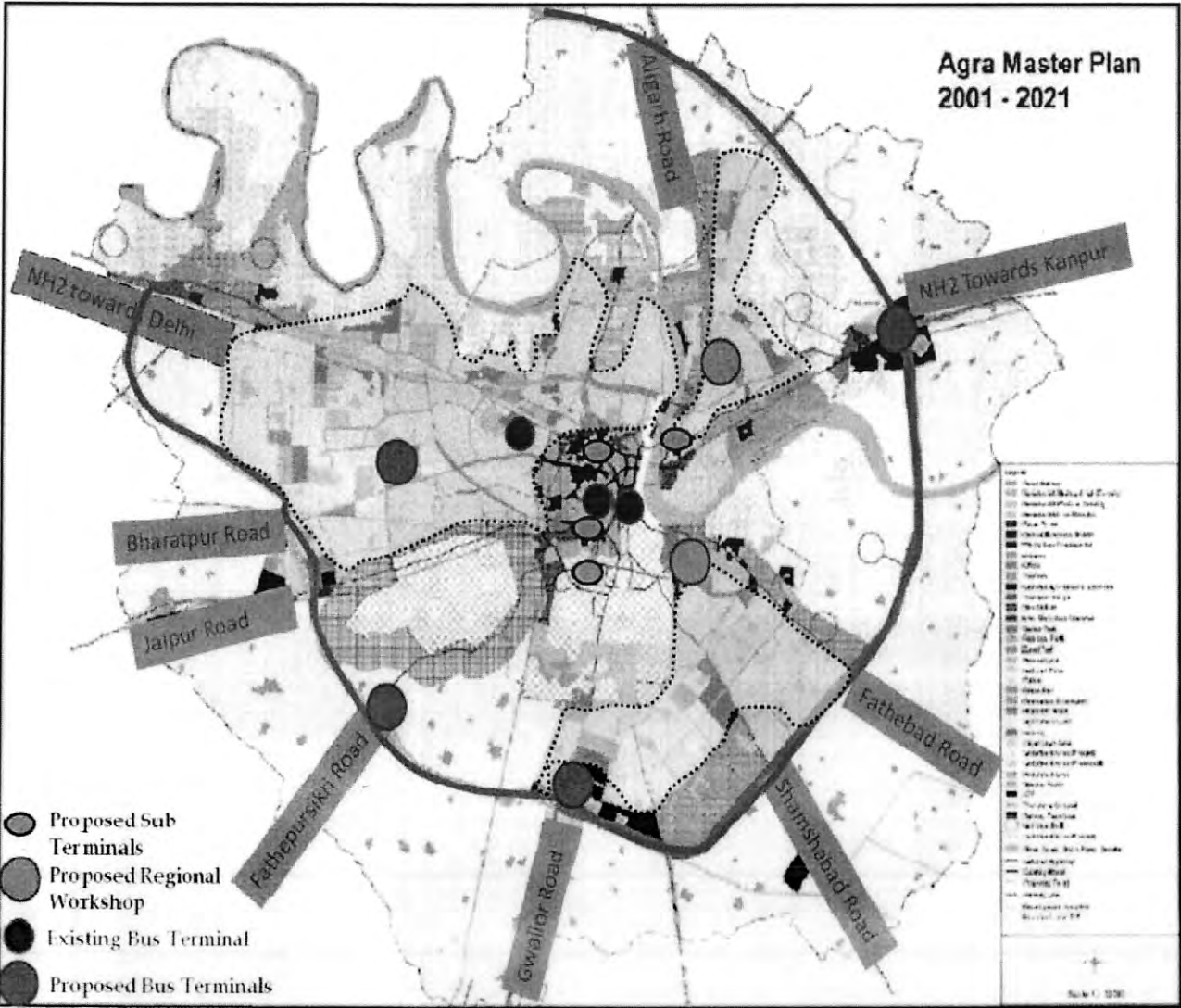
- 11 radials will have to be connected by 3 orbital's.
- Access to the Taj will shift towards the west of the city



Public Transport Plan

- Augmentation of city bus services
 - Improved Coverage
 - Higher Frequency
 - Introduction of ITS
- Creation of Transport Infrastructure
 - Bus Stops
 - 4 Bus depots
 - 4 terminal
 - 2 Regional Workshop

Public Transport Infrastructure

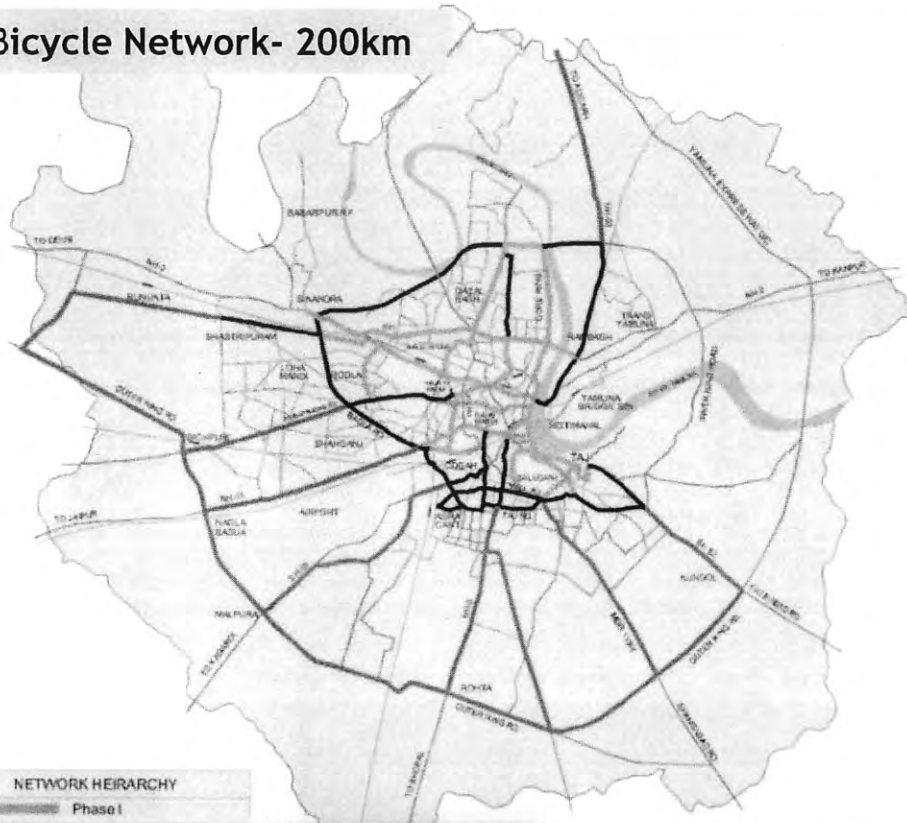


Infrastructure Requirement:

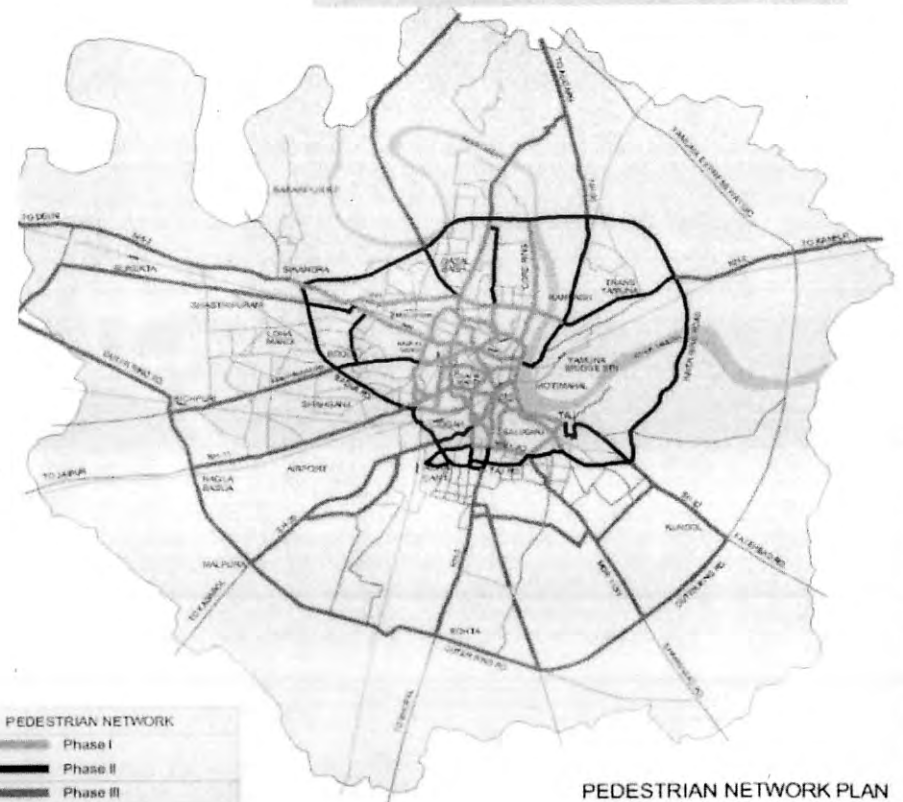
- 3 Existing bus terminals - ISBT, Idgah & Agra Fort
- 4 Proposed bus Terminal / depots- Fatehpur Sikri Road, Gwalior Road, Kanpur Road & Shastripuram.
- 4 Sub Terminals- Collectorate, Bhagwan Talkies, Water Works Crossing, Cantonment Railway Station
- 2 Regional Workshop

Non Motorized Transport Network

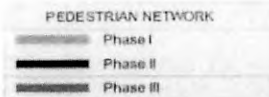
Bicycle Network- 200km



Pedestrian Network- 300 Km

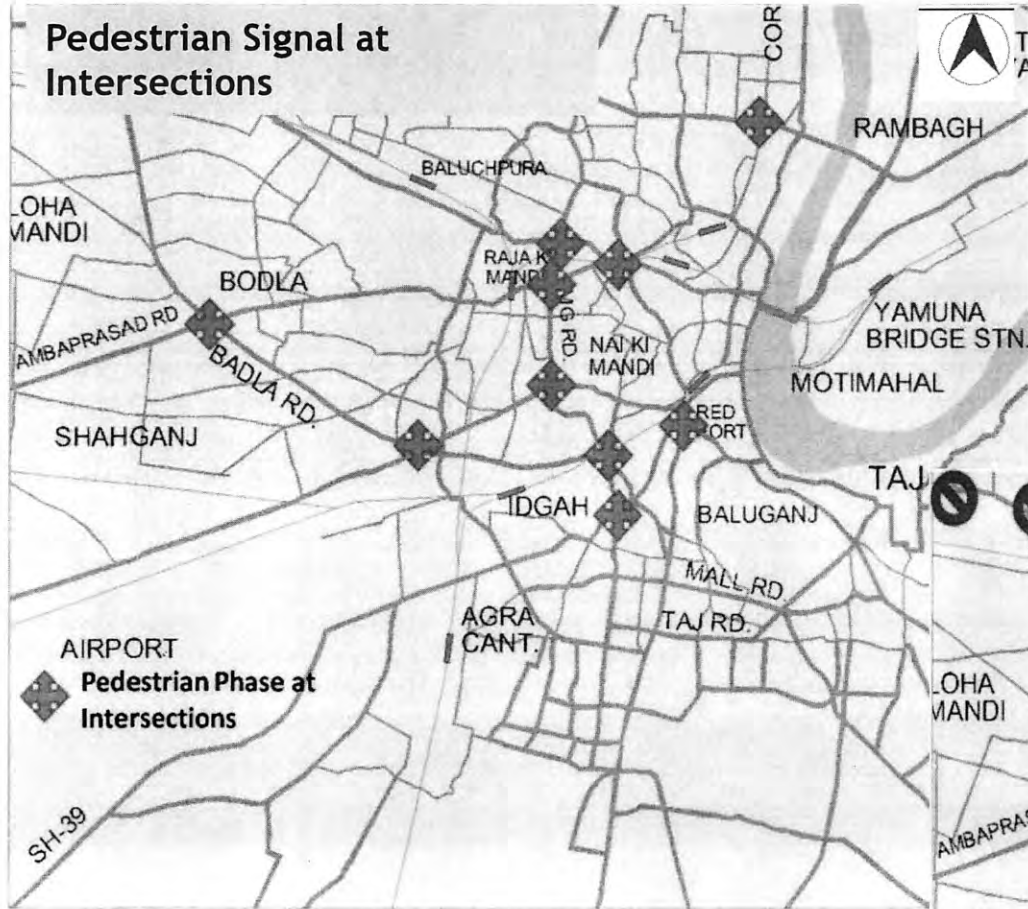


NMT Network



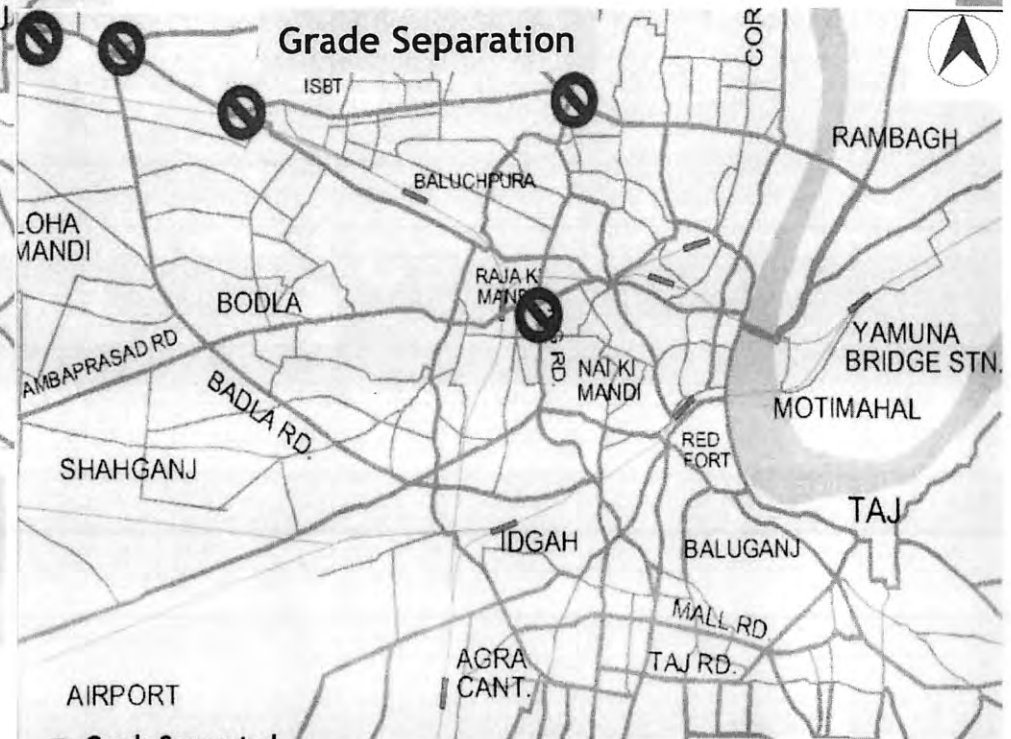
PEDESTRIAN NETWORK PLAN

NMT- Recommendations



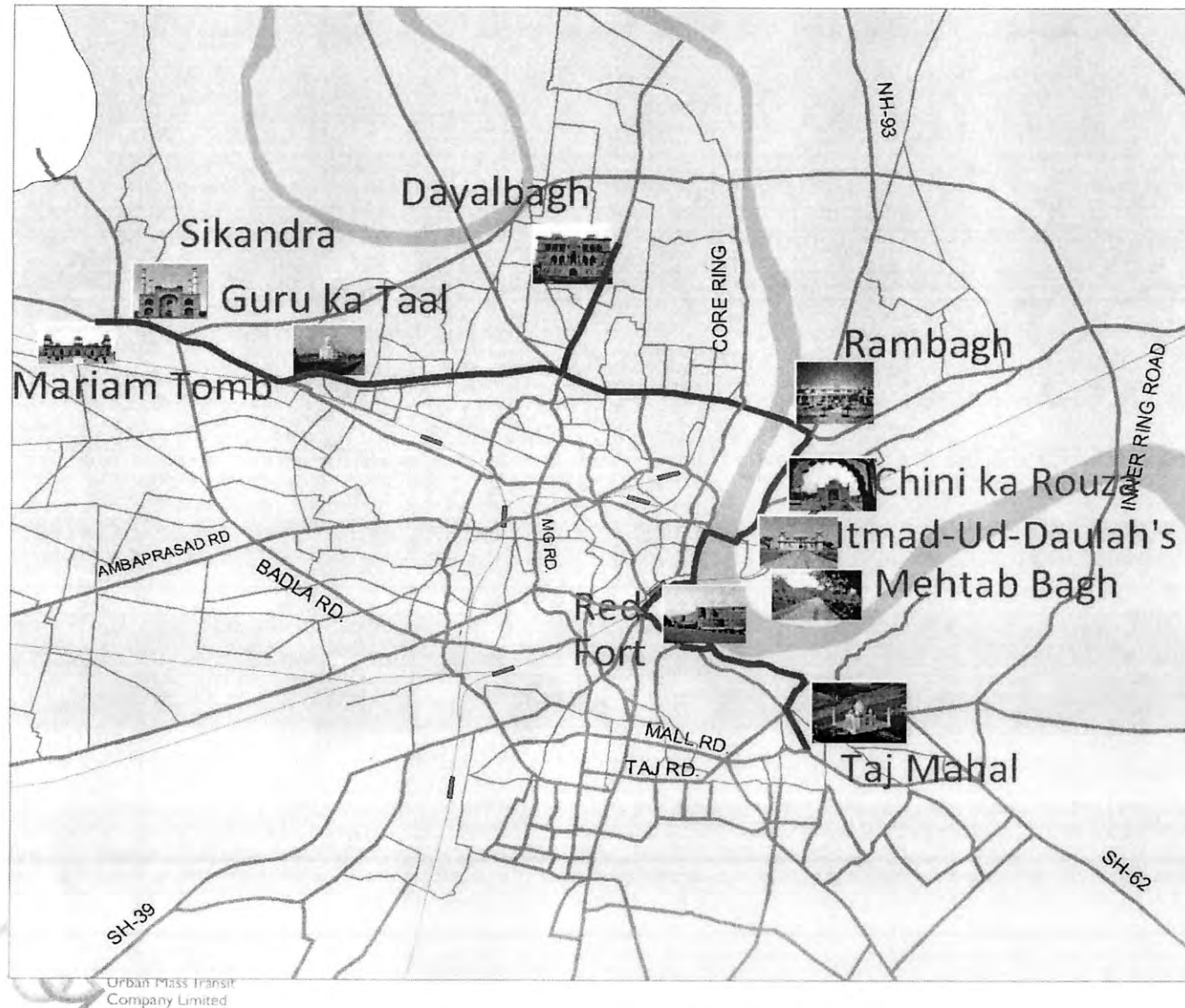
Pedestrian Phase at Intersections

Hariparvat, Bodla, Red Fort, Motilal Intersection, Nalband Intersection, Sai ki Takia, Collectorate, Fatehpur Sikri Crossing, Raja ki Mandia and Waterbox



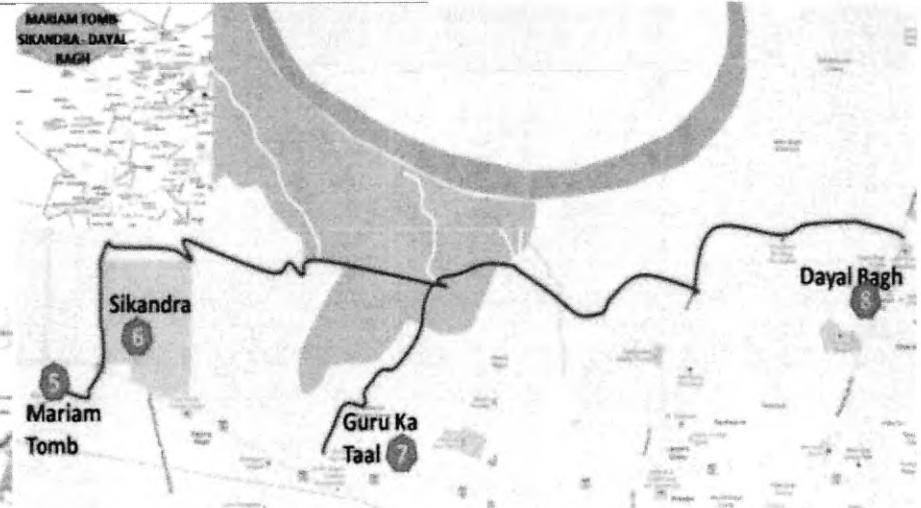
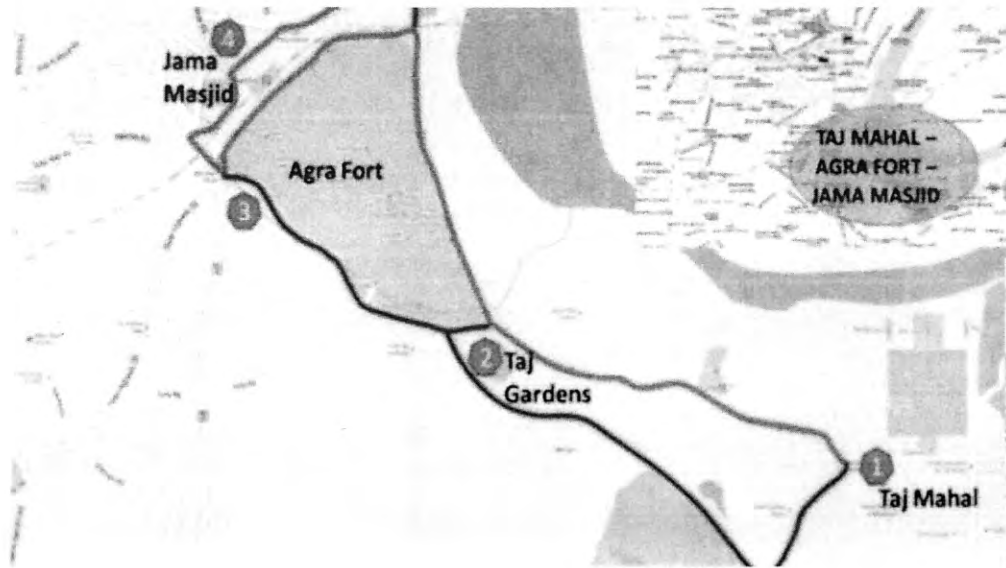
Grade Separated pedestrian facilities-
Dayalbagh, St. Johns. Sikandara, Marium Tomb and Guru ka Taal

Tourist Mobility Plan- Hop On Hop Off Service

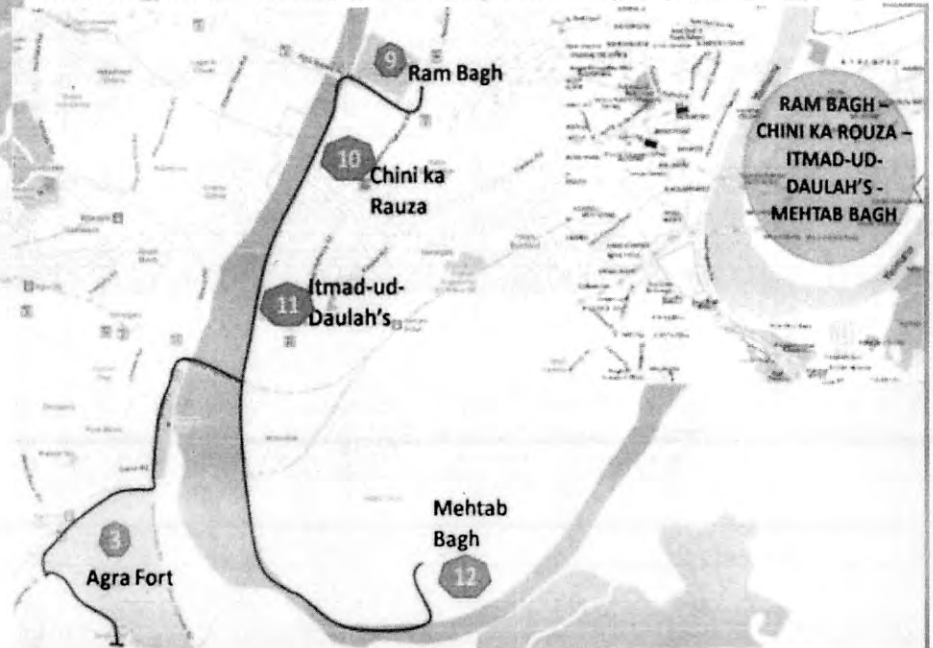


Tourist Mobility Plan- Public Bike Sharing Scheme

Taj Mahal - Taj Gardens - Agra Fort - Jama Masjid- 1.5km



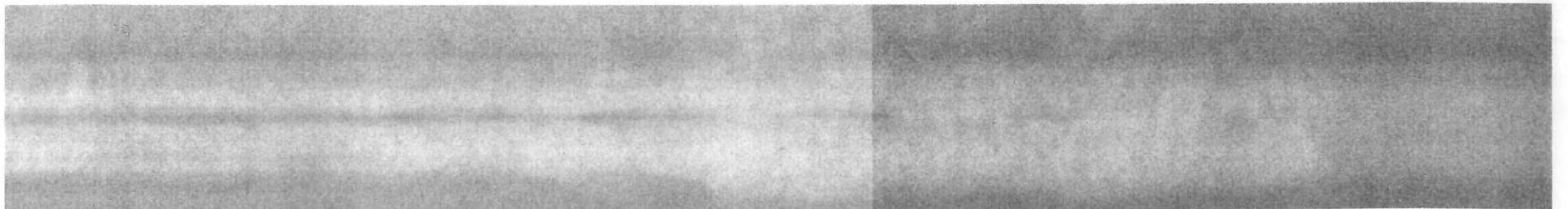
Mariam Tomb - Sikandra - Guru ka Taal - Dayal Bagh- 7km



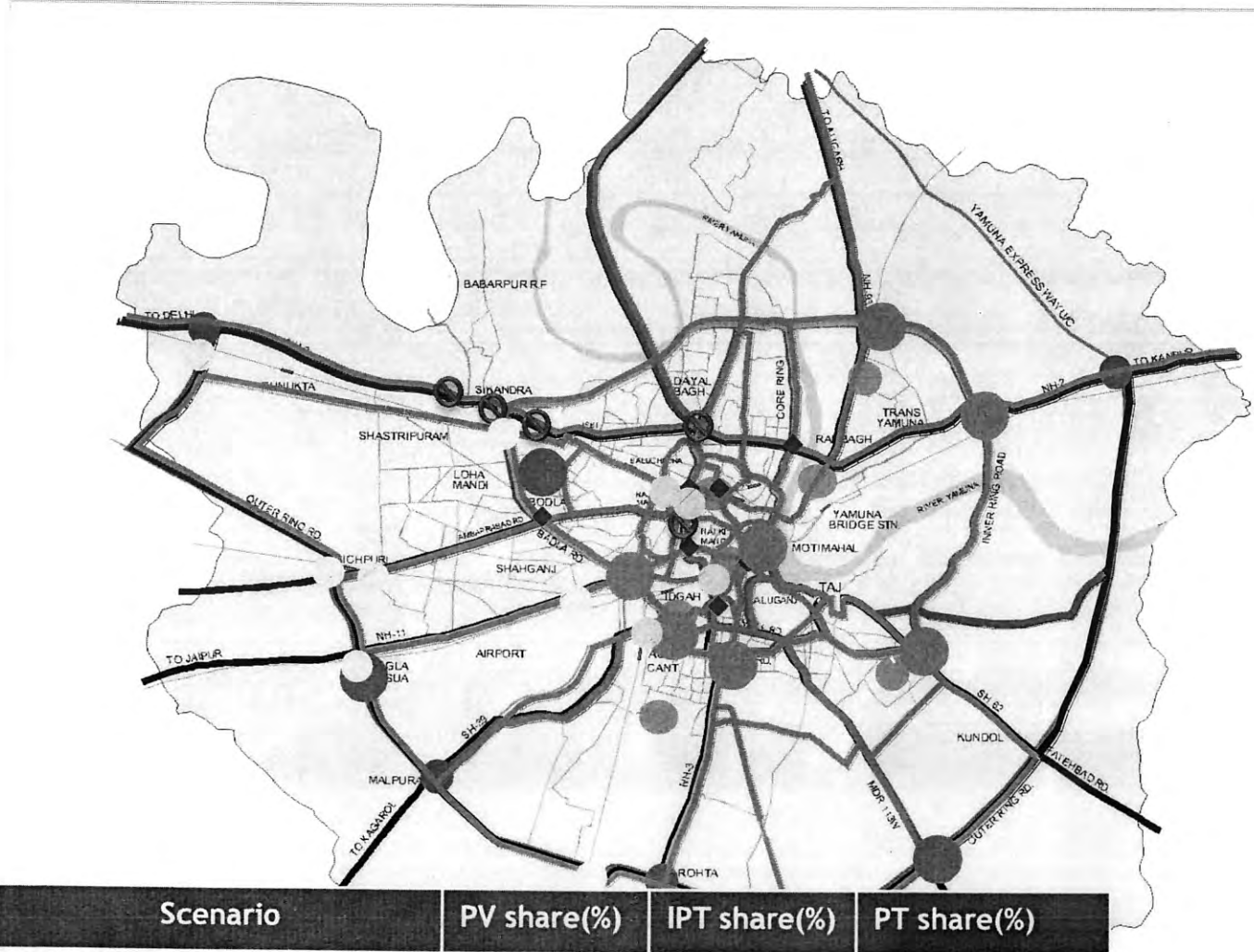
Chini ka Rouza - Itmad-ud-Daulah's - Mehtab Bagh - Agra Fort- 2.5km



Summary



Summary



Mobility Corridors

Public Transport Network

Public Transport Infrastructure

NMT Network

Pedestrian Signal

Grade Separated Pedestrian Crossings

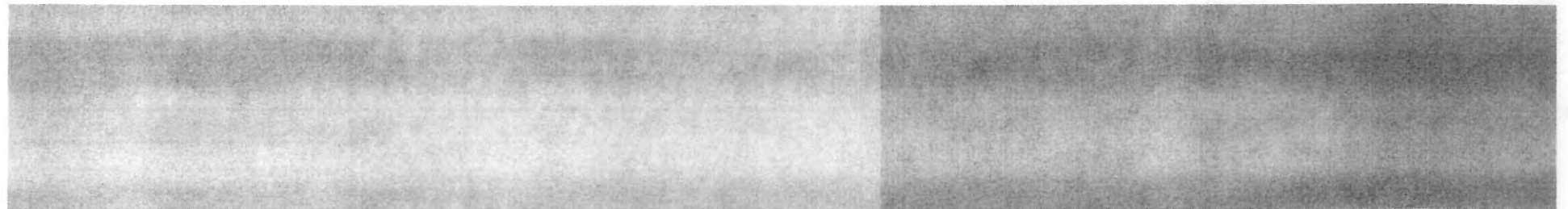
ROBs Infrastructure

● Widening of existing ROBs
● New ROBs

Scenario	PV share(%)	IPT share(%)	PT share(%)
Base year	52	42	6
Do Nothing-2031	54	40	5
With Proposed Interventions	51	24	26



Costing Details and Funding Options



Costing- Rs in Crores

Proposals	Phase 1	Phase 2	Phase 3
Public Transport	206.84	524.6	1349.24
Tourist Management Plan	21	6	0
NMT	96.85	92.6	175
Freight Management Plan	6	118.5	64
Road Developemnt Plans	142	350	315
Other Plans	62	42	11
Immediate Measures	51.5	5.5	1
Total	586.19	1139.2	1915.24

Improving Mobility– Next Steps

S No	Project Categories	Projects	Next Steps	Funding Agencies for Implementation			
				GoI	PPP	Multi. L Agencies	GoUP/ ULB
1	Public Transport Planning	Public Transport System (Mass Transit)	Alternative Analysis and DPR	✓	✓	✓	✓
		Public Transport Infrastructure	Operations and Service Planning DPR + Feasibility Report for Depots	✓	✓		✓
		City Bus Services		✓	✓		✓
2	NMT Planning	Bicycle Tracks , Footpaths and pedestrian signals	DPR / NMT Master Plan	✓	✓	✓	✓
		Footover bridges/Subways			✓		
3	Freight Management and Planning	Upgradation of existing transport nagar + New Freight Centres	DPR for Logistics & Freight Management		✓		
4	Parking Management	Off street parking facilities	DPR including Comprehensive Parking Plan		✓		
5	Traffic Management	Flyovers and RoBs					✓
		Road Improvement and completion of missing links	DPR	✓		✓	✓
6	Area Improvement Schemes	Junction Improvement					✓
		Decongestion/traffic improvement and management schemes for local areas	DPR (submitted)				✓
7	Other Plans	Awareness Programs, Cycle Rickshaw Schemes, Hawker Management etc		✓	✓	✓	



Immediate Improvement Measures



Focus Areas

- Area Traffic Improvement

- Traffic Circulation
- Parking
 - Personalized Vehicles
 - IPT
 - Buses (wherever applicable)
- Road Signage

- Junction Improvements

- Junction Design
- Signal Phasing Plan

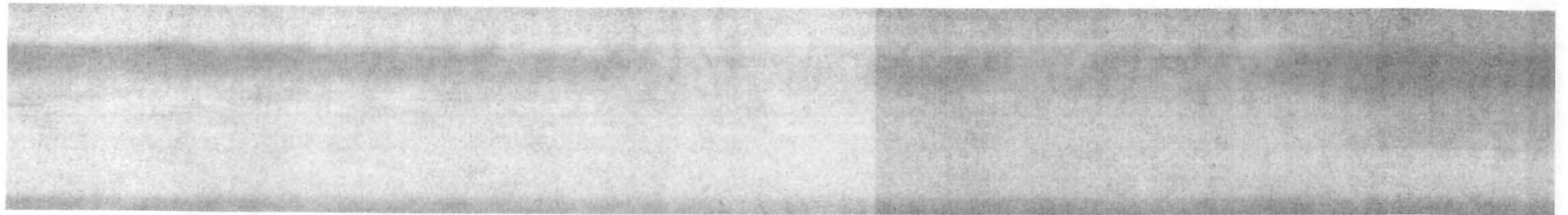
- Road Improvement Plans

- Road Markings
- Removal/ Provision of Median
- On Street Parking
- Removal of Encroachment
- Road Signage
- Pedestrian Crossing Facilities
- Location of High Mast Lights
- Road Resurfacing





Area Traffic Improvement Plans



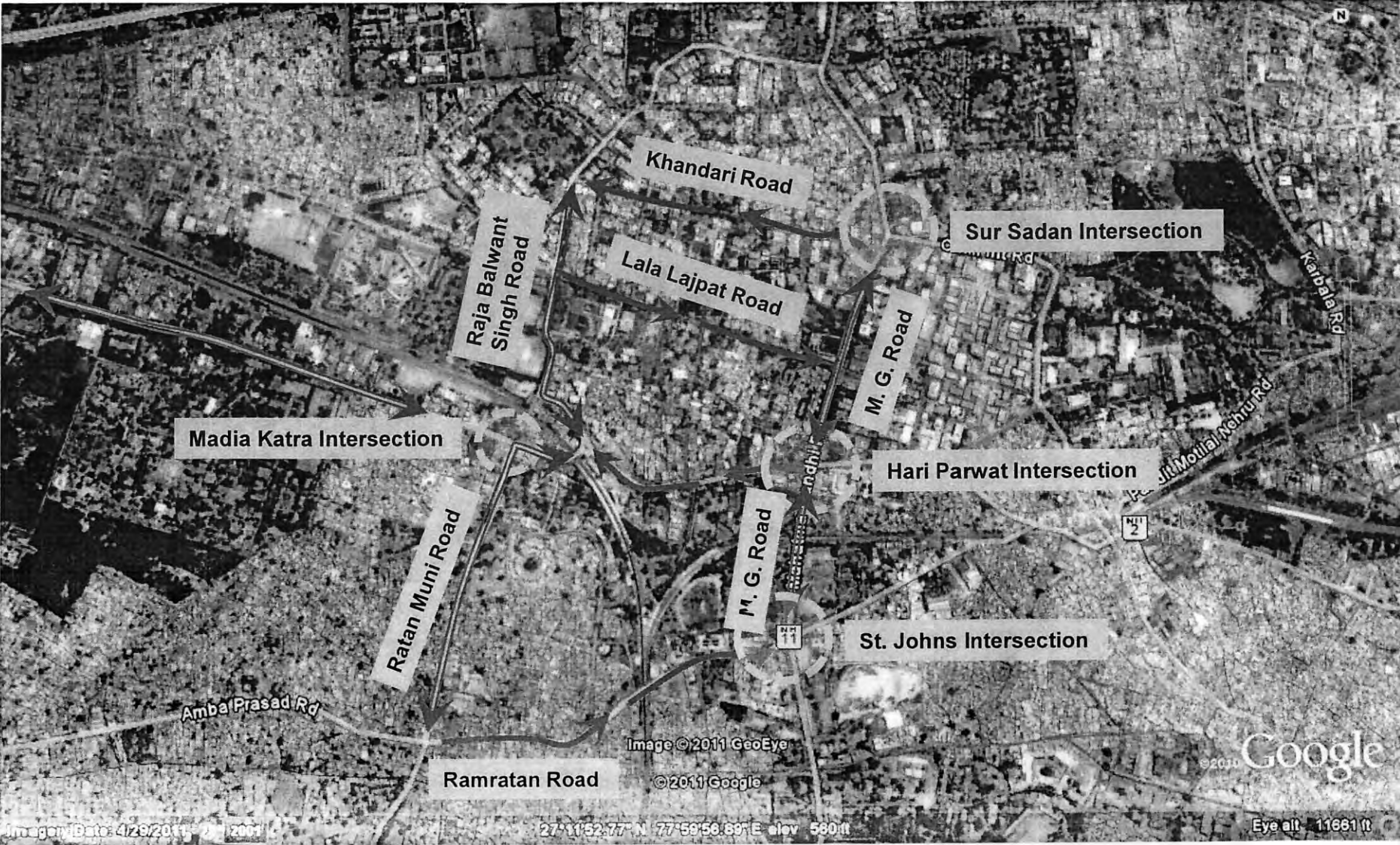
Area Traffic Improvement Plan: Coverage



1. Hari Parwat Chowk
2. Agra Fort
3. Agra Fort Station
4. Raja ki Mandi Station & Market
5. Mandi Area - Hing ki Mandi, Kinari Bazaar
6. ISBT- Transport Nagar



Area Traffic Improvement: Hari Parwat Chowk

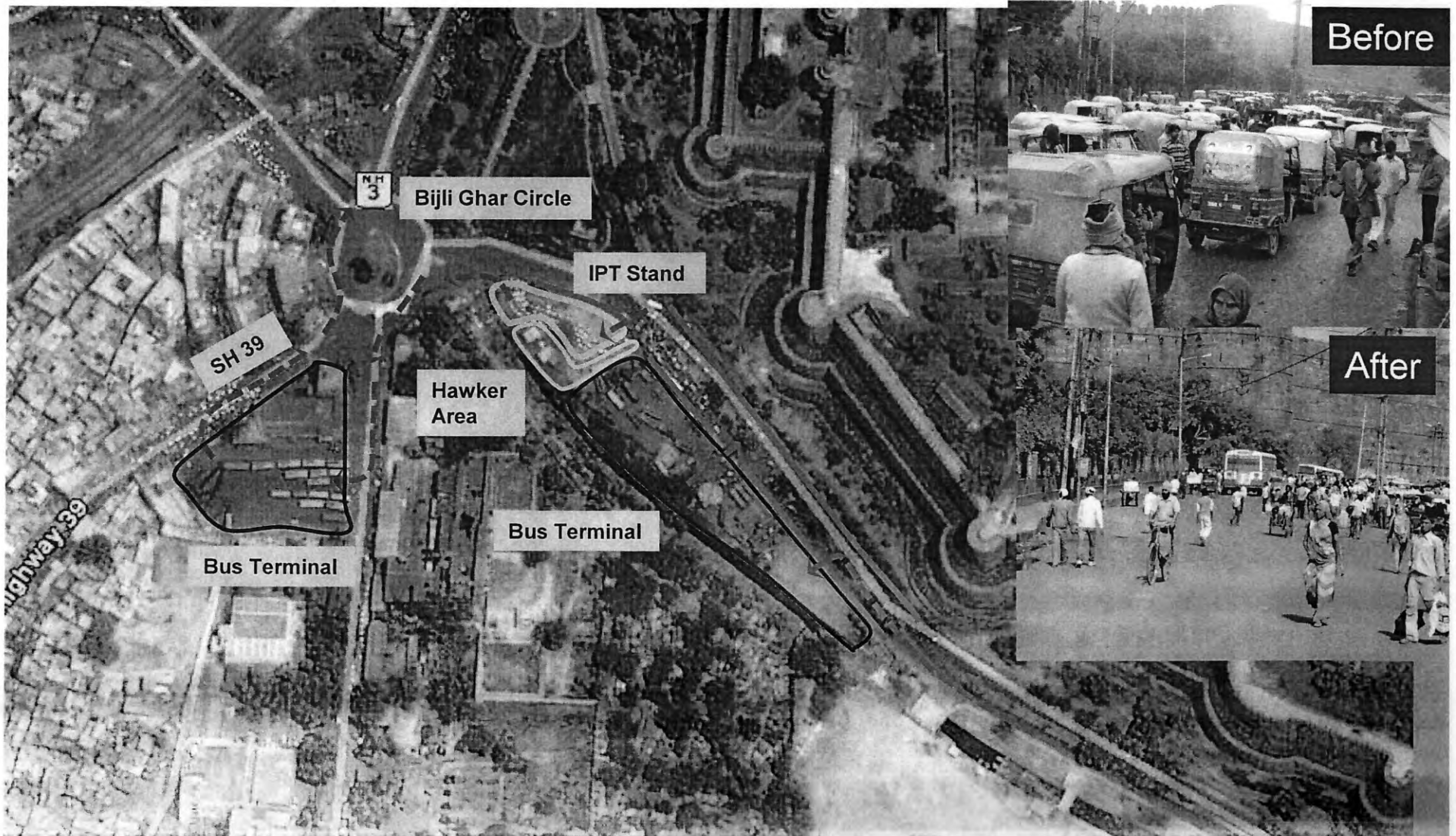


→ One Way Schemes

○ Close median

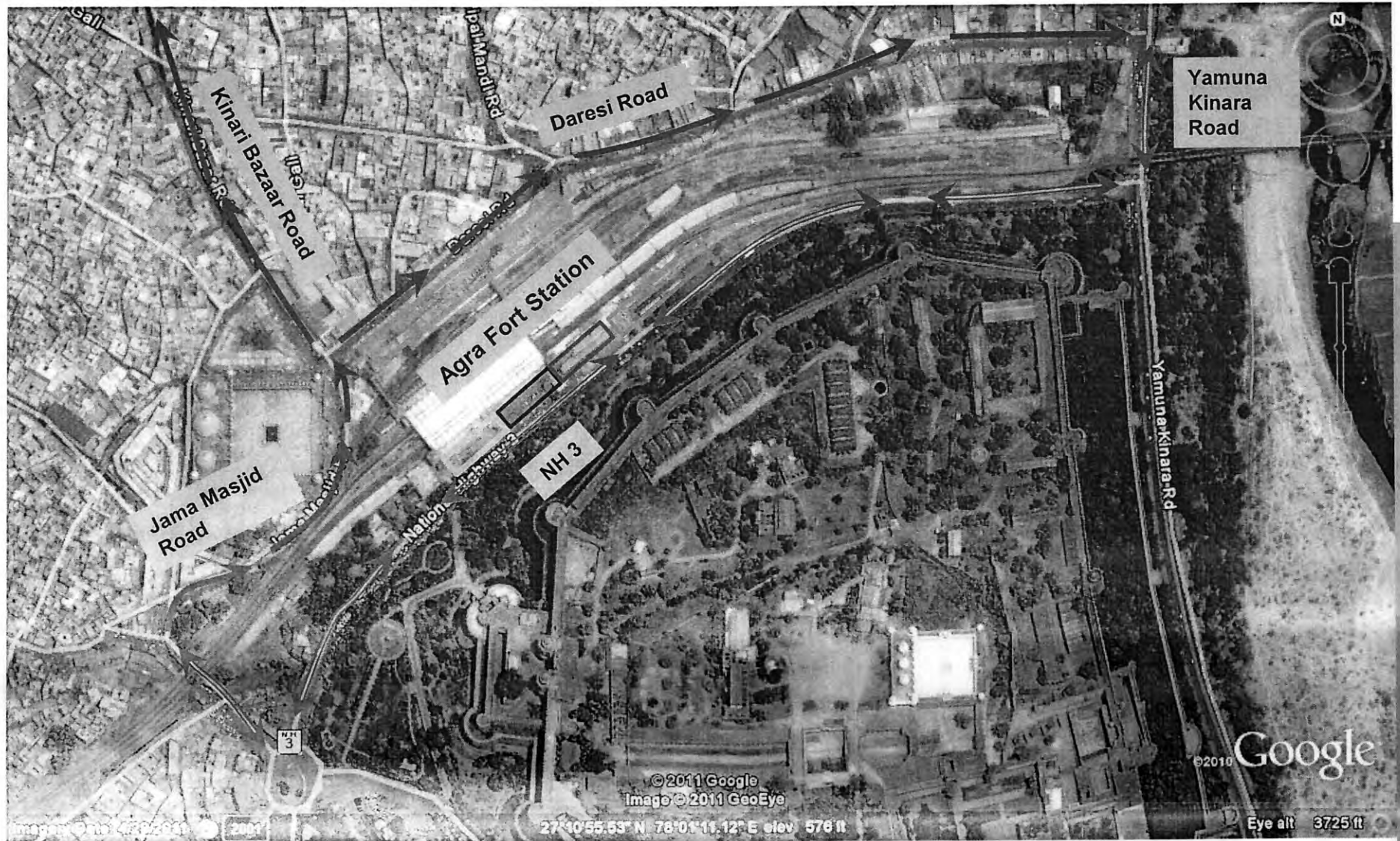
● Intersection Improvement

Area Traffic Improvement: Agra Fort Area

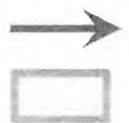


- Bus Terminal
- IPT Stand
- Hawker Area
- Footpaths
- Bus Circulation

Area Traffic Improvement: Agra Fort Station



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One Way Schemes



IPT Stand



Car Pick and Drop



Four Wheeler Parking

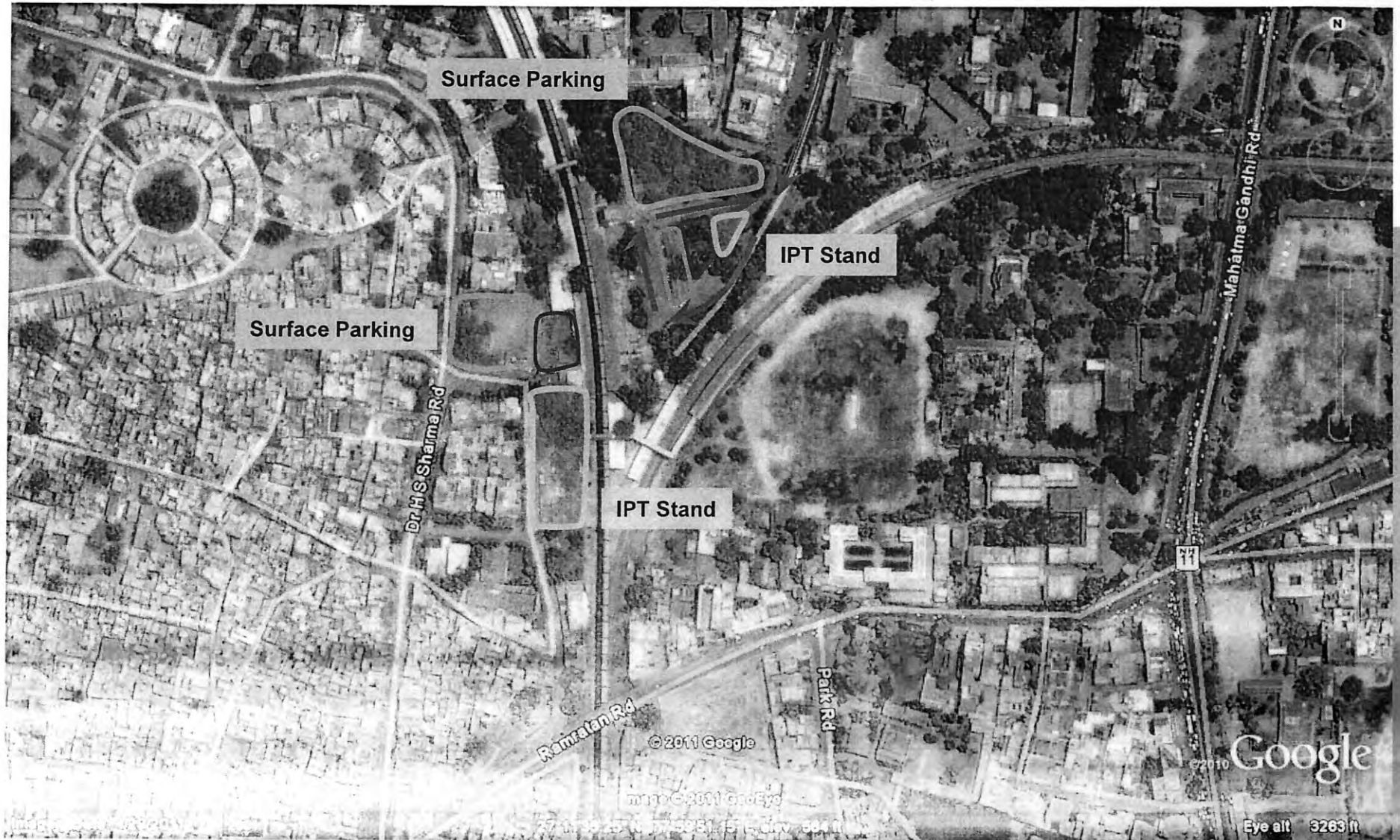


NMT Parking




Bus Pick and Drop

Area Traffic Improvement: Raja Ki Mandi Station



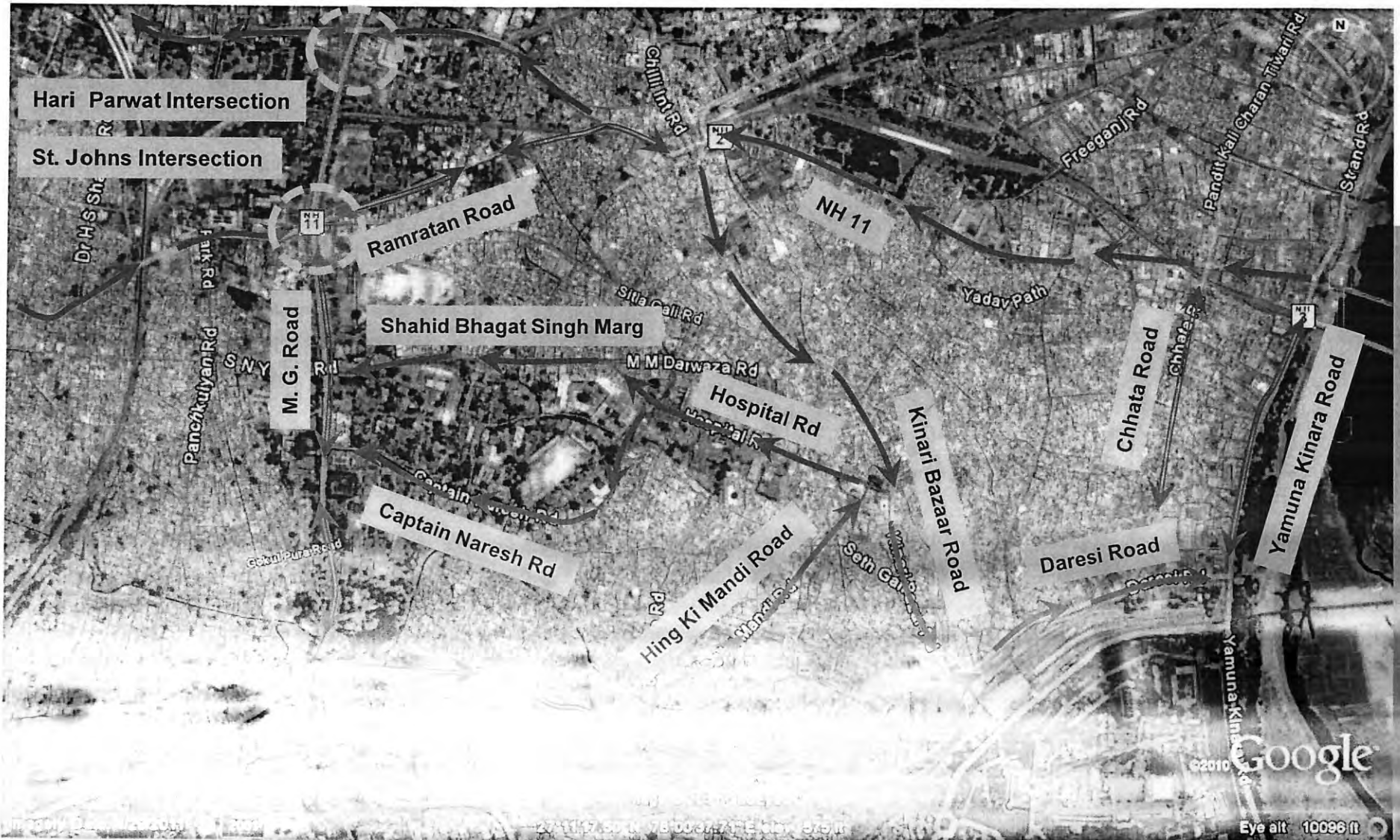
Urban Mass Transit Company Limited

-  Four Wheeler Parking
-  IPT Stand

-  NMT Parking
-  Bus Pick and Drop

 Circulation

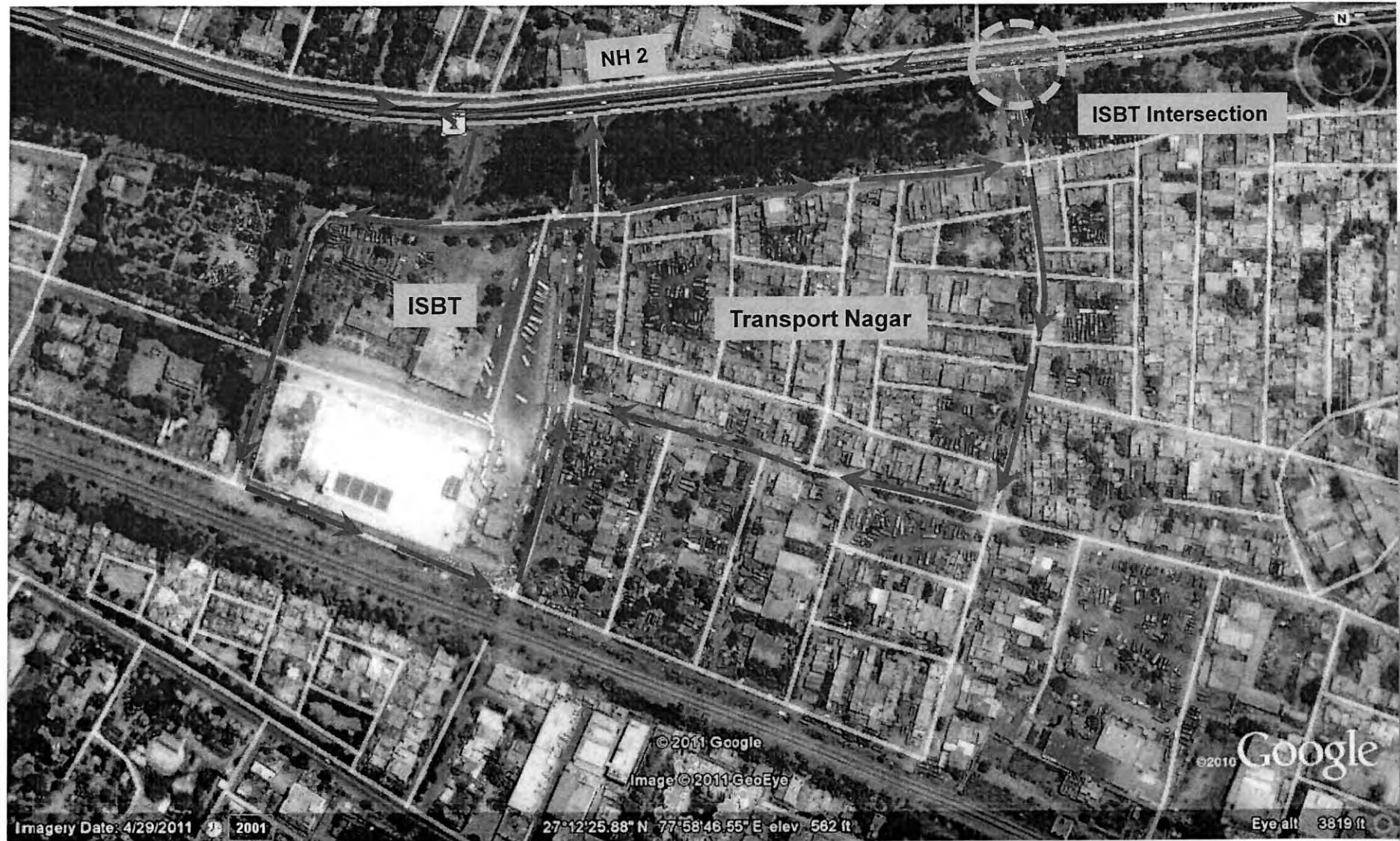
Area Traffic Improvement: Mandi Area



→ One Way Schemes

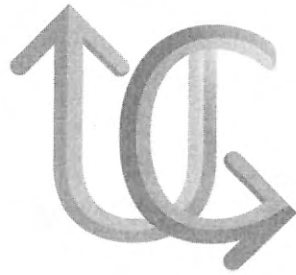
○ Intersection Improvement

Area Traffic Improvement: ISBT / Transport Nagar



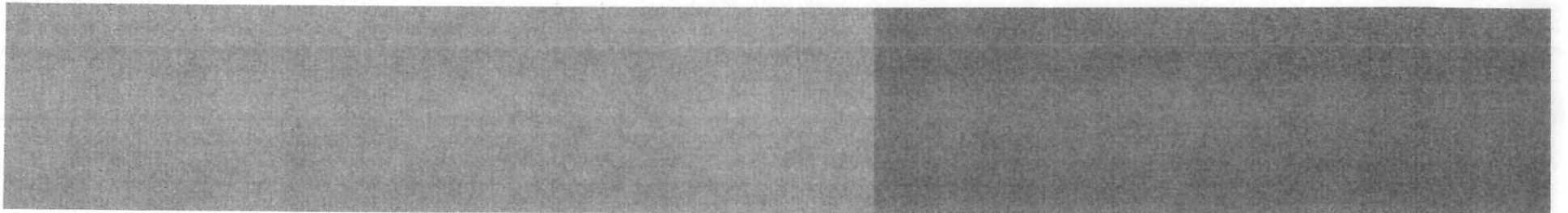
→ One Way Schemes

⊙ Intersection Improvement

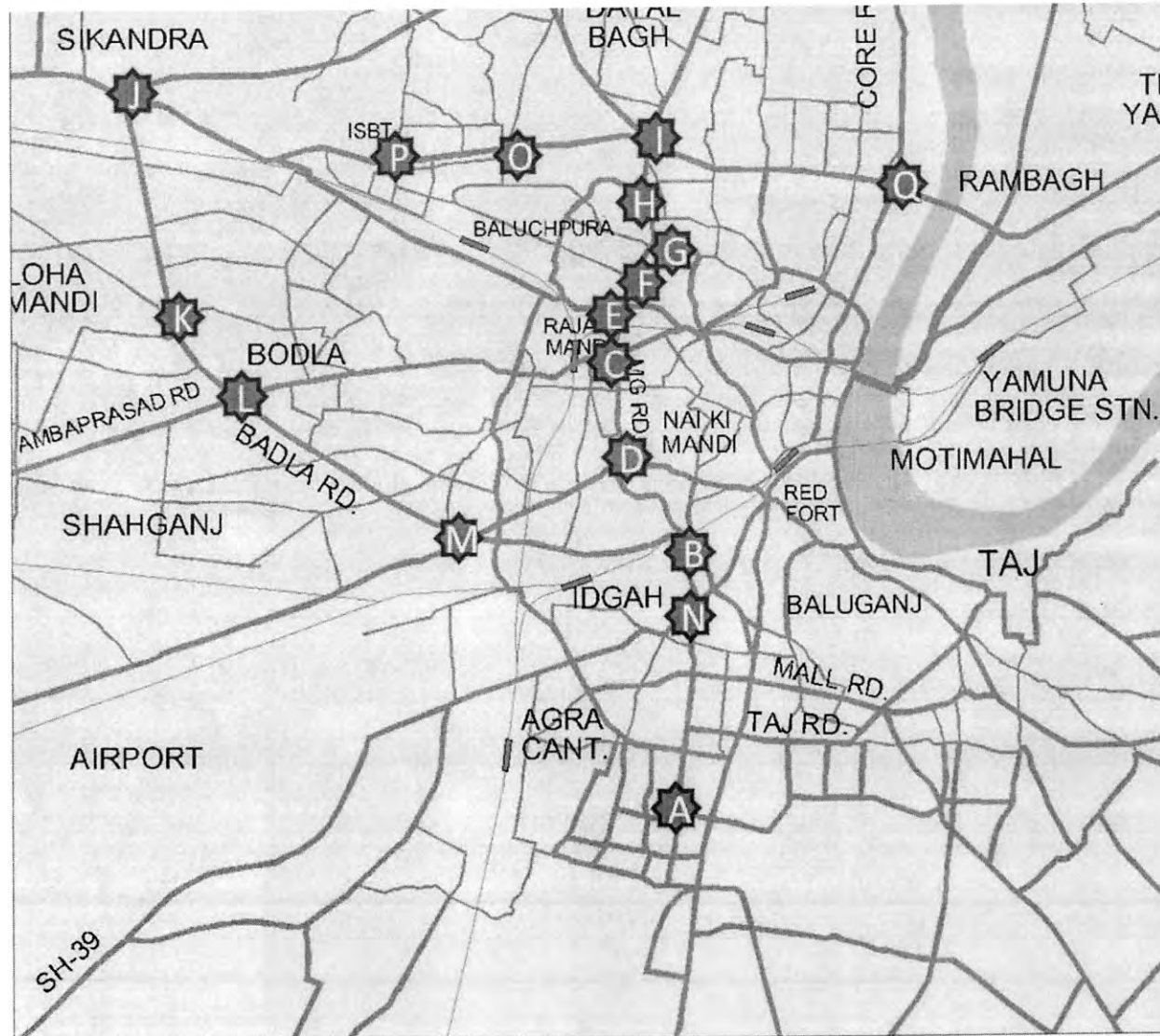


Urban Mass Transit
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Intersection Improvement Plans



Traffic Engineering Measures- Junction Improvement



S.no	Junction
A	Pratap Pura Z Chowk
B	Chipitola Chowk
C	St. Johns Junction
D	Collectrate Chowk
E	Hariparvat Chowk
F	Sanjay Palace Chowk
G	Sur Sadan Chowk
H	Diwani Chowk
I	Bhagwan Talkies
J	Sikandra bypass
K	Bodla Chowk
L	Ram Nagar Pulia
M	Shahganj
N	Sai ki Takia
O	Kandhari
P	ISBT at NH2

Thank You