PRESENTATION ON

LAST MILE CONNECTIVITY IN KALABURAGI CITY ON THE RAMMANDIR TO SEDAM ROAD CORRIDOR

BY

Kotrappa. D
DC, NEKRTC KALABURAGI

SURESH PATTAR
AEE, NEKRTC CO , KALABURAGI

Kempanna Gudennavar
DTO, NWKRTC CO , HUBBALI

MENTOR

Prof.Shivanand Swamy, CoE-UT
CEPT University, Ahmedabad
Shri. Kunal Parikh Senior Project Associate,
CoE,CEPT University

OBJECTIVE

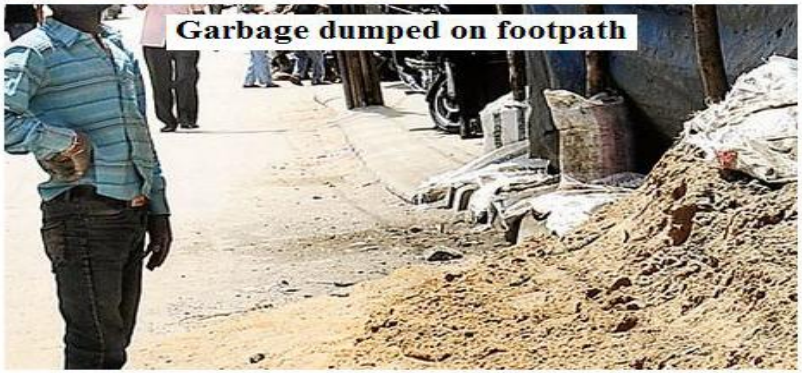
- To evaluate the Public Transport System in order to identify the missing links for integrated transportation
- To assess the role of Last Mile Connectivity in efficient delivery of Public Transport System.
- To prepare a strategy to improve the last mile connectivit in order to improve the public transport connectivity in Kalaburagi.

PROBLEMS AND CHALLENGES

The interior part of the city is thickly populated residential area mainly with lower income groups. The major challenges and problems are listed as under.

- Road width and net work
- Manoeuvrability
- Over head clearances
- Affordability
- Distance from the existing services
- Trip length compared with trip time
- Cost of operation
- Load factors
- Waiting time for change over

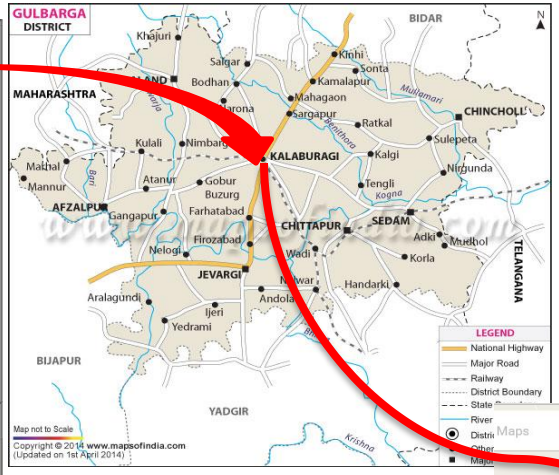
CHALLENGES TO LMC IN KALABURAGI CITY

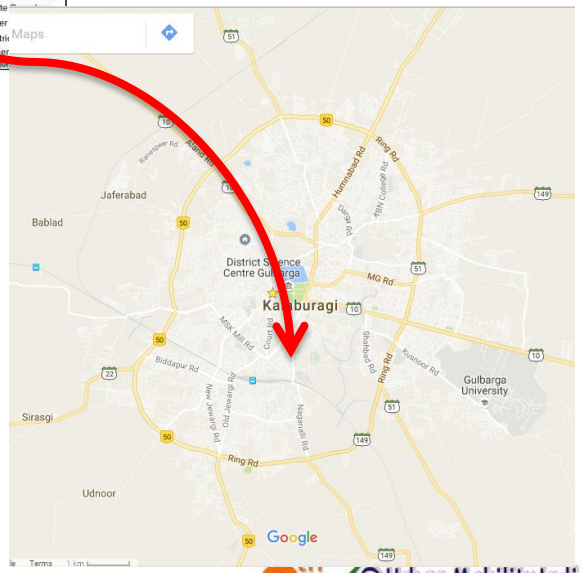


Source- newindianexpress.com

KALABURAGI CITY AT A GLANCE

- Kalaburagi earlier name Gulbarga
- LPA limit of City 253sq.kms
- 4th largest City of Karnataka
- District as well as Divisional headquarter of 6 NE district of Karnataka





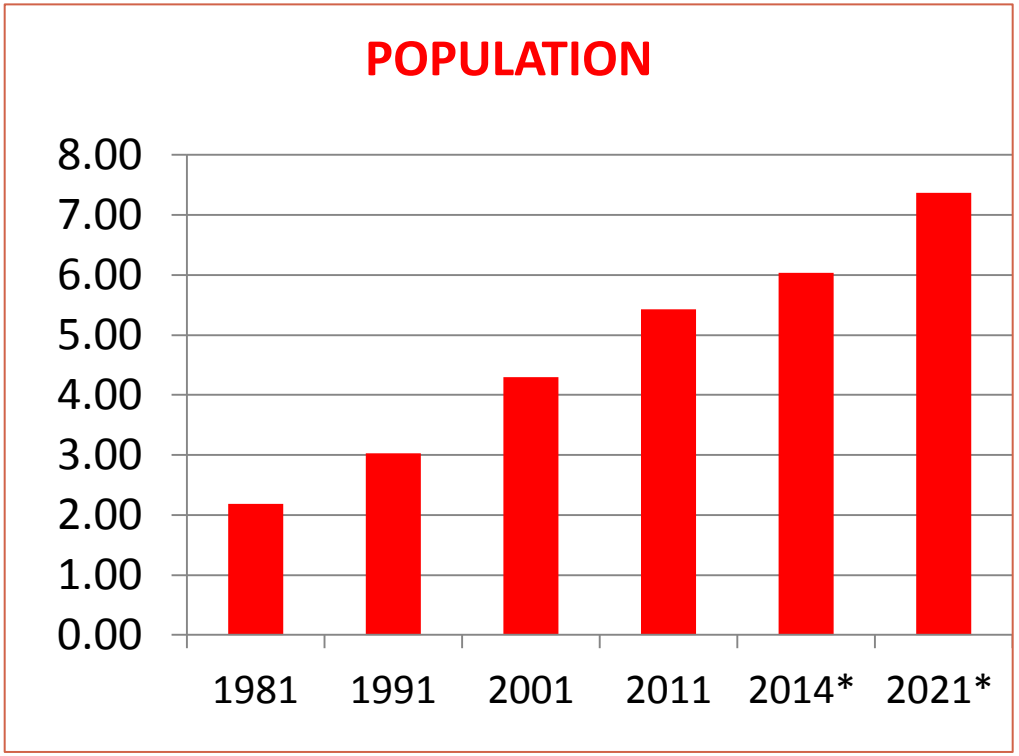
LAST MILE CONNECTIVITY IN KALABURAGI CITY

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

DEMOGRAPHY

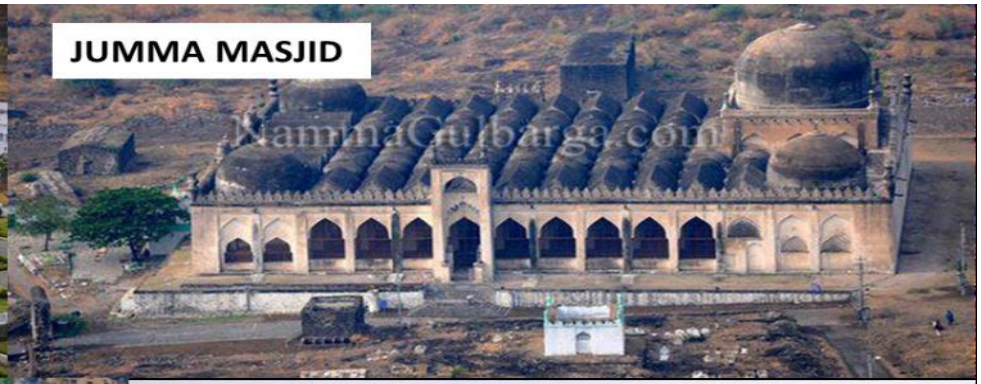
- Kalaburagi Muncipal Corporation divided into **55**wards
- City coverage area : **64sq. kms**
- Road network : **825kms**
- Population of city **5.32** lakhs (2011 census)
- Average decadal growth rate : **35.60%**
- Population density : **8486/km2**

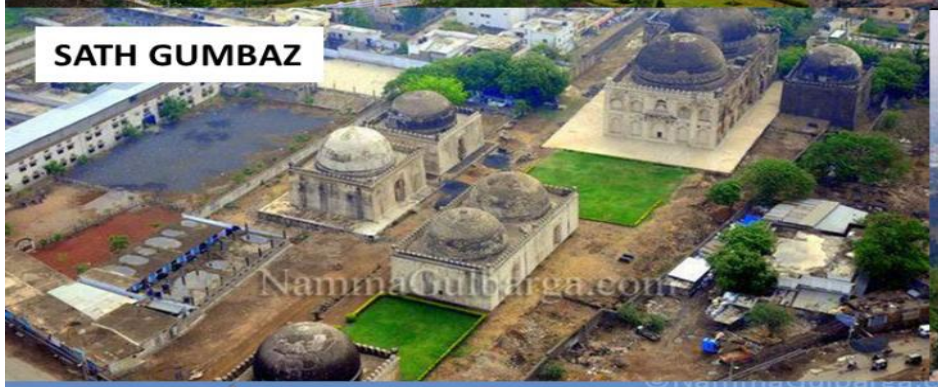
Year	Population	Decadal Growth Rate (%)
1981	218621	
1991	303139	38.65
2001	430108	41.88
2011	543147	26.28
2014*	603244	35.60**
2021*	736507	35.60**

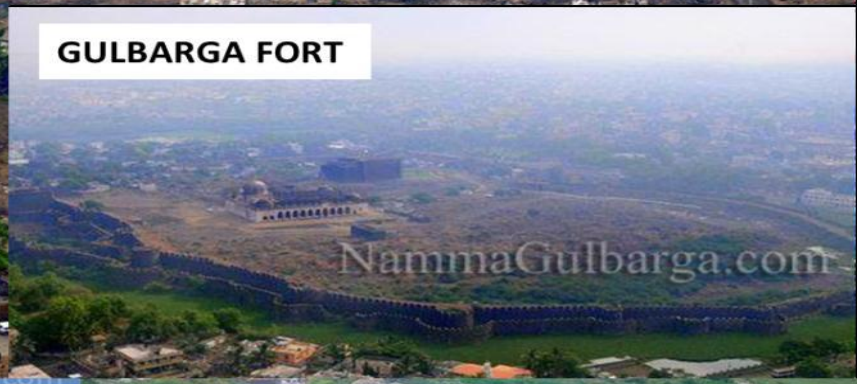


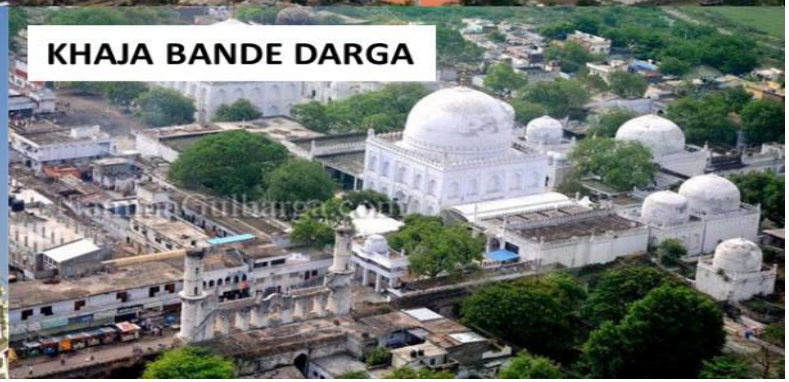
*** Projected** ****Average decadal growth**

TOURIST SPOTS IN KALABURAGI





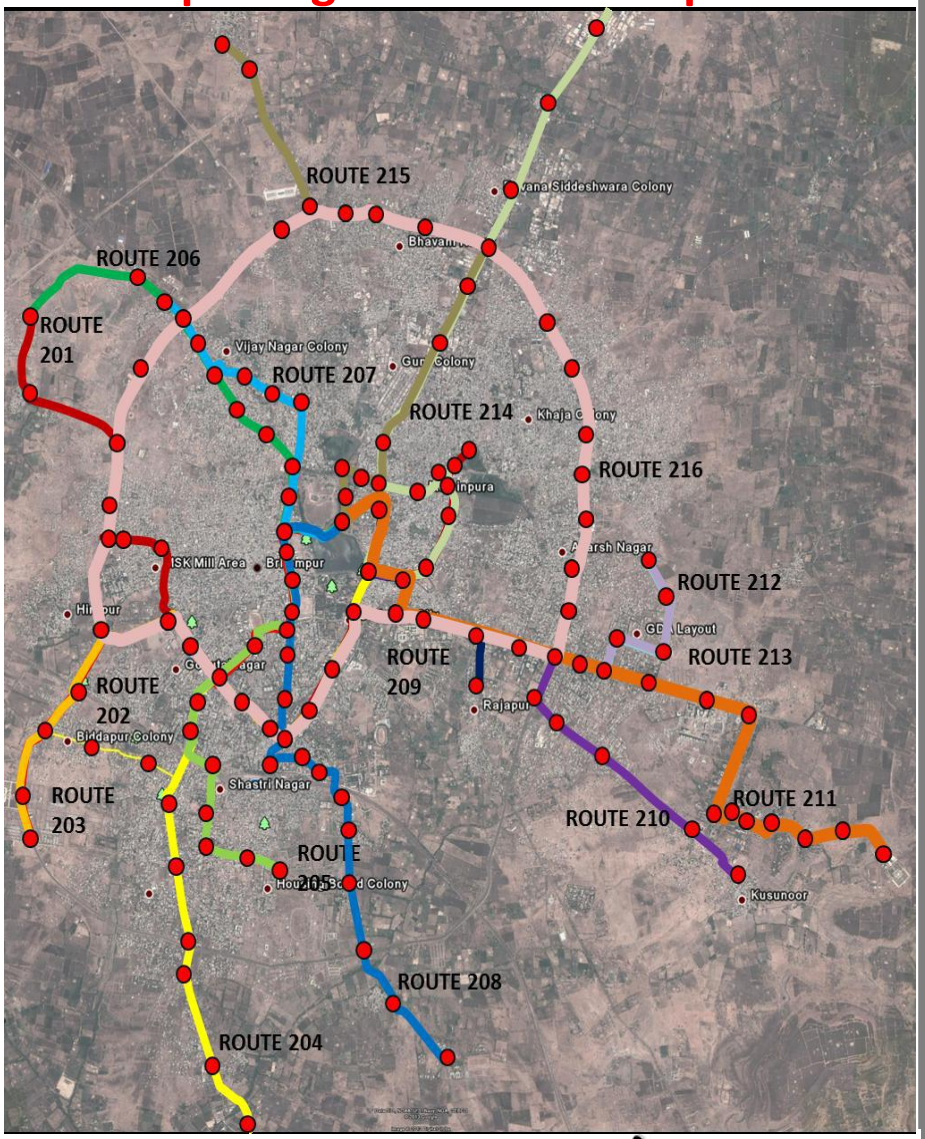




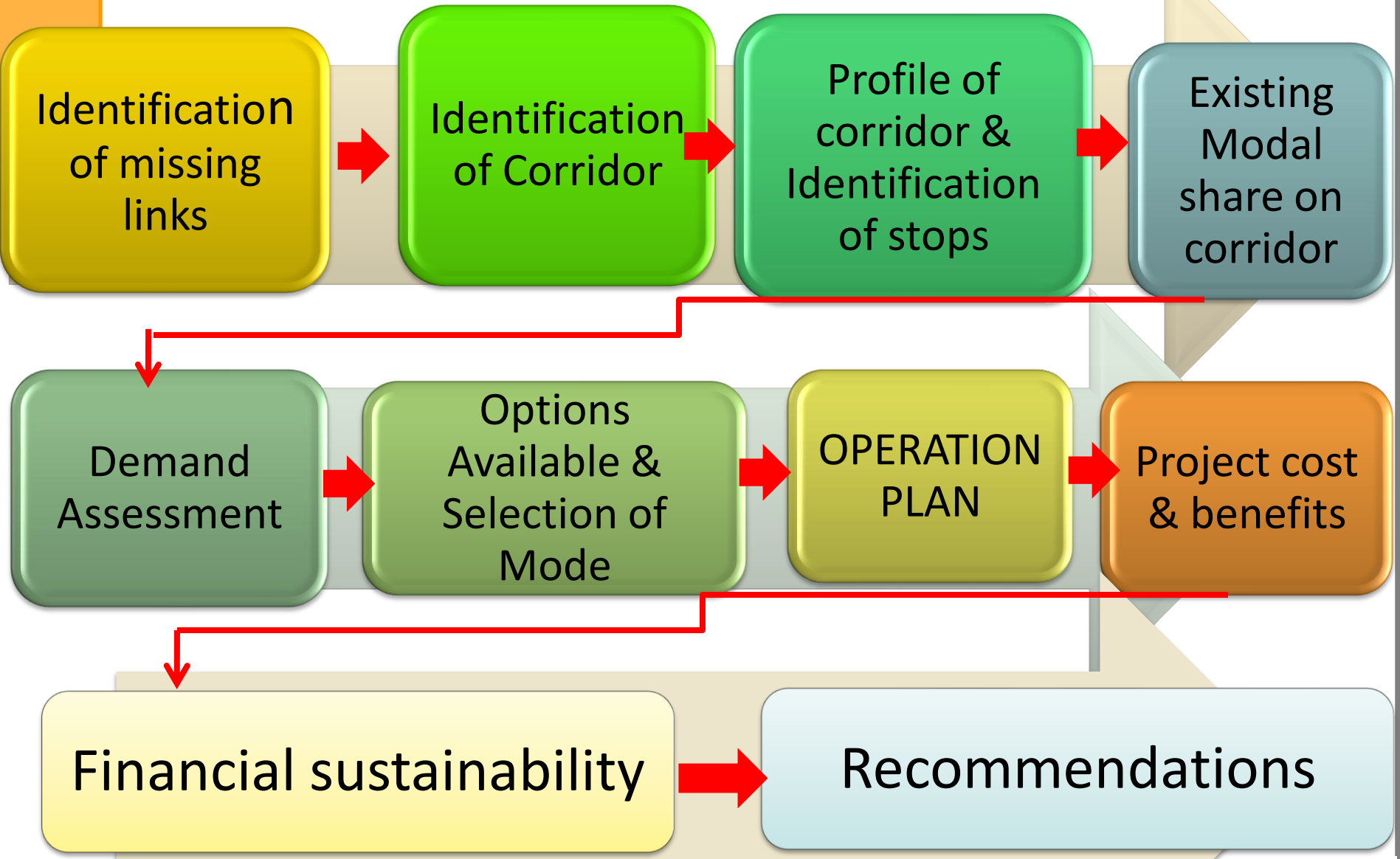
PRESENT OPERATION IN KALABURAGI CITY

S.N	Parameters	Present
1	No. of Buses	88
2	No. of Trips	1062
3	Route kms	14784
4	Revenue per bus per day (in Rs)	5325.00
5	Average EPKM (in Rs)	29.55
6	Ridership per day	102014
7	Ridership per bus	1225
8	Vehicle Utilization (in Kms)	180

Nrupatunga Bus Route Map



METHODOLOGY



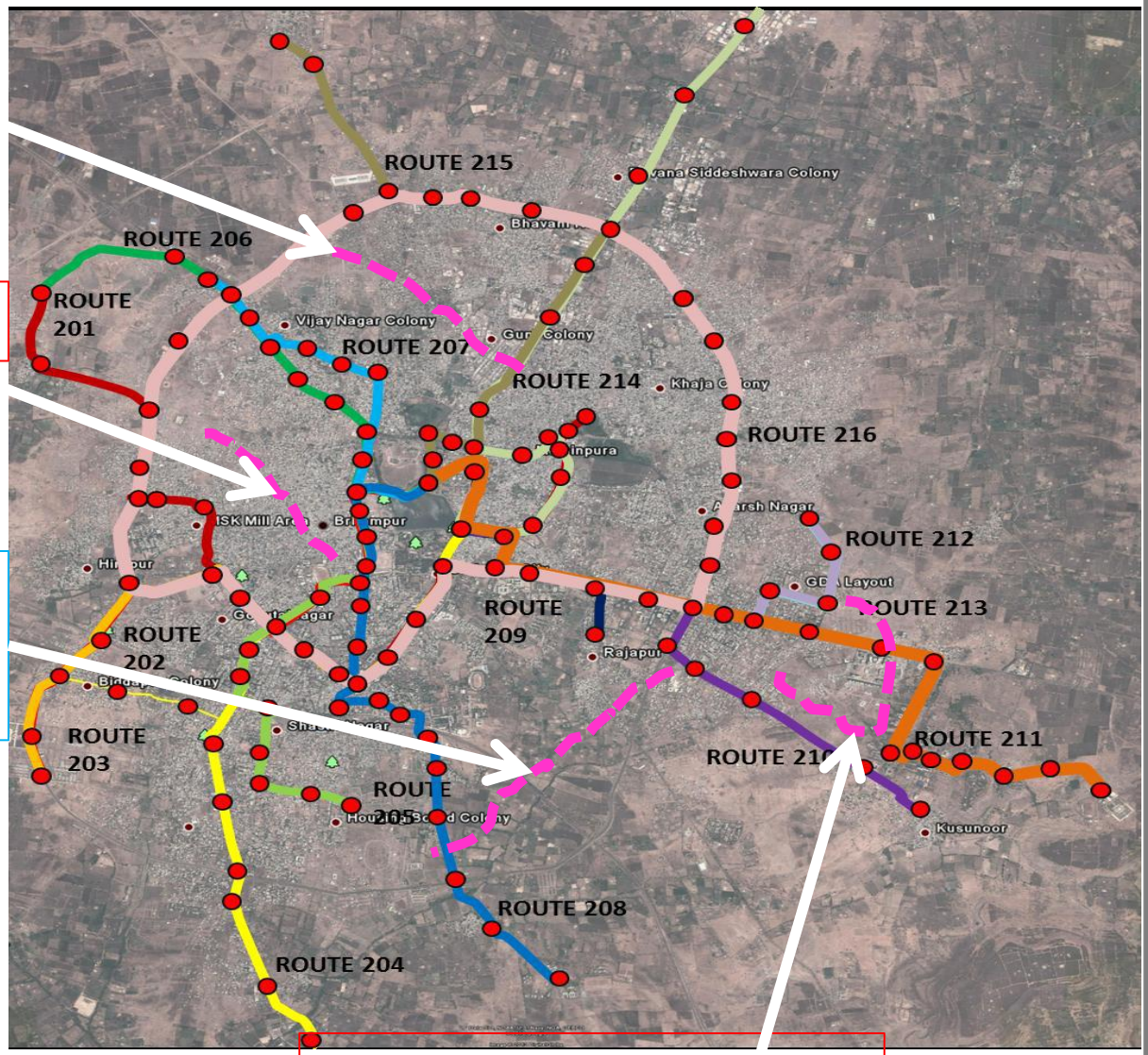
MAJOR MISSING LINKS IN KALABURAGI CITY

Neharu Gunj- Bhavani Nagar

SB Naka – Dubai colony

Ram Mandir – Sedam road

Missing link

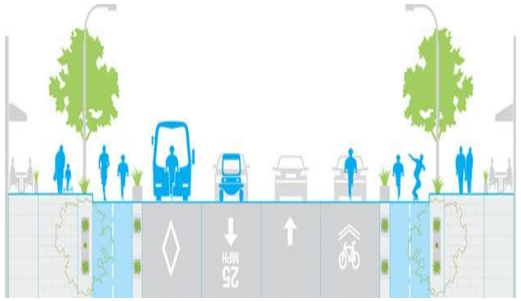


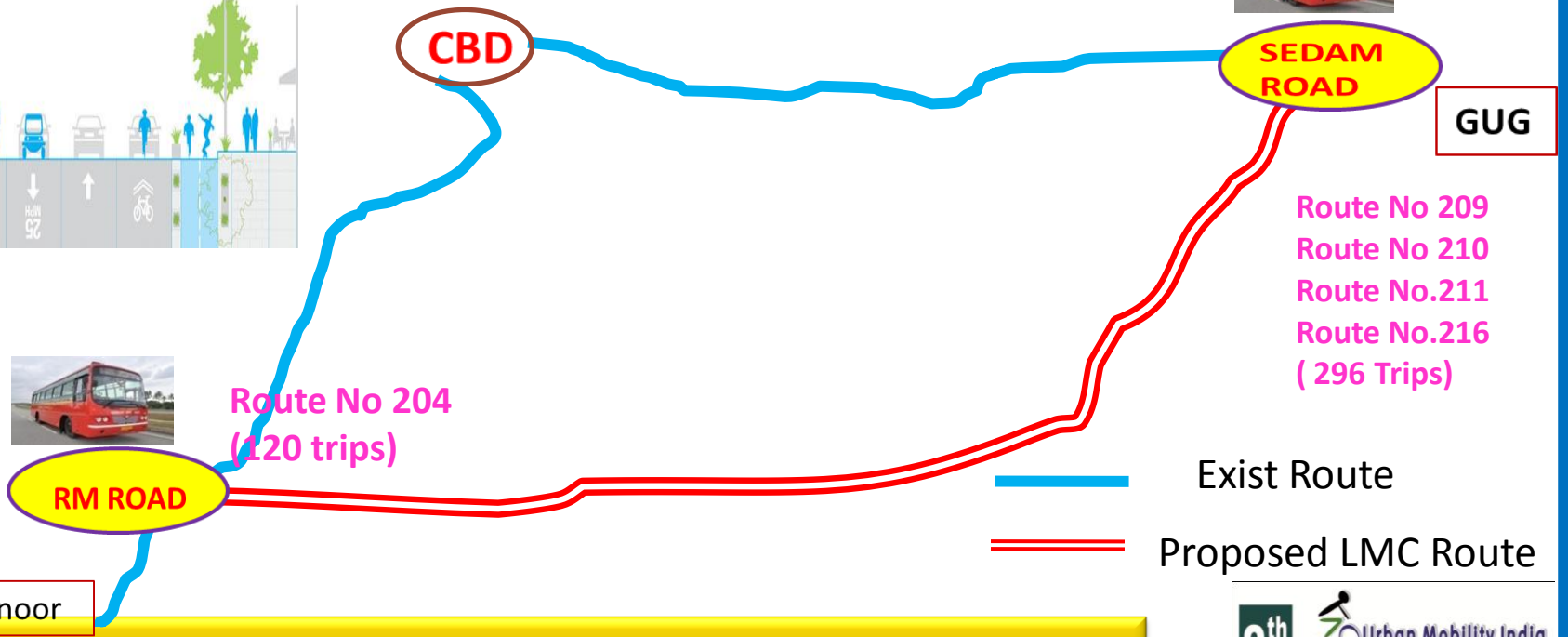
OM Nagar – Okli camp

IDENTIFICATION OF ROUTE

- In order to implement last mile connectivity, Ram Mandir road to Sedam road corridor is selected based on demand and analysis of survey data.
- This area is mainly planned for residential areas, therefore there are many residential localities, Educational Institutions, Hospitals, Govt.Offices etc., are developing on either side of this corridor after 2013.

- To connect two trunk routes
- Stops to easy access to commuters





- Route length 6.30Kms

The Corridor on either side have

- Developed colonies -12
- Educational institutes -11
- Government offices -5
- Recreation -2
- Hospital & medical centres-7
- Police Training Centre- 1

PROFILE OF ROAD

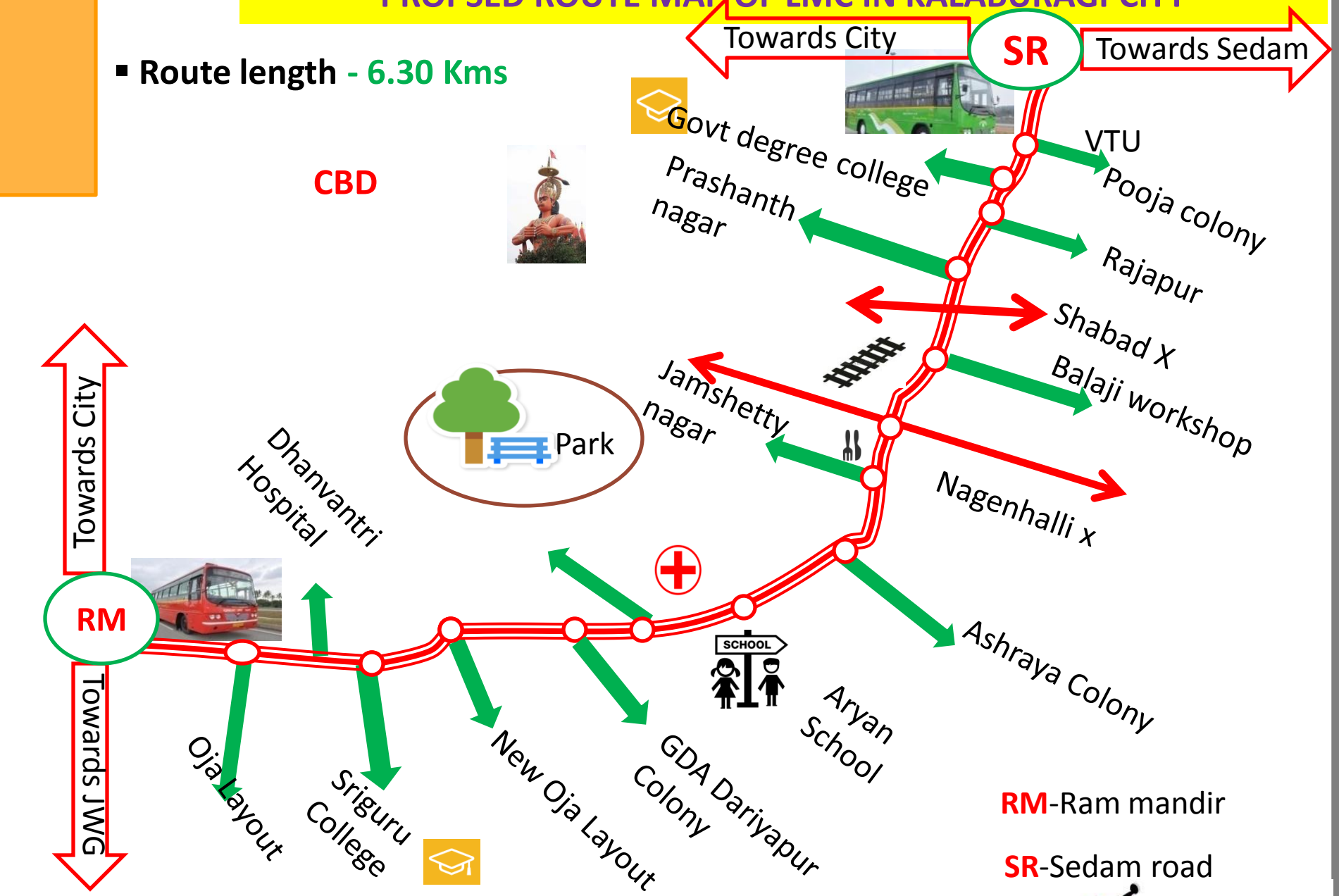
- Two laned 9 mtr carriage way on either side with median.
- Surface is asphalted.
- No paved footpath, Cycle track and pedestrian crossings
- No Traffic Signals and road furniture

STOP PLACES ON PROPOSED ROUTE

S No	Stop place	Distance in Kms.
1	Sedam Road	
2	Kusnur X/Govt. Degree College	0.50
3	VTU	0.20
4	Prashanth Nagar	0.50
5	Shabad X	0.90
6	Balagi workshop	0.40
7	Railway ovrbridge	0.70
8	Naganhalli X	1.00
9	Ashraya Colony	0.50
10	Daraypur Kotnur Layout.	0.30
11	New Oza Layout	0.30
12	Oza Layout	0.70
13	Ram Mandir	0.30
	Total	6.30

PROPSED ROUTE MAP OF LMC IN KALABURAGI CITY

- **Route length - 6.30 Kms**



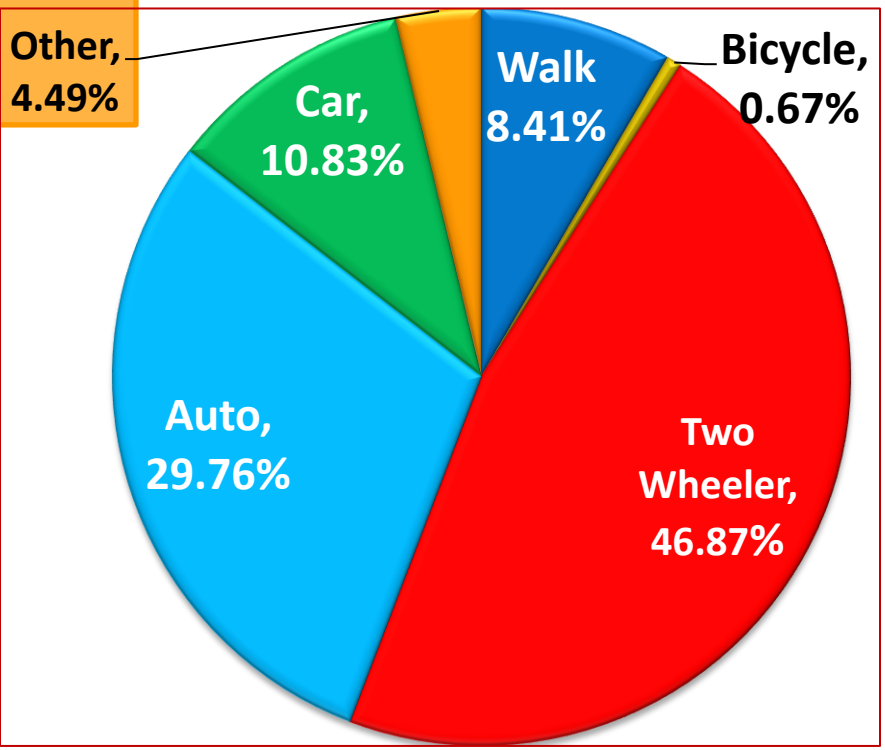
LAST MILE CONNECTIVITY IN KALABURAGI CITY

LOCALITIES COMES ON EITHER SIDE OF PROPOSED LMC ROUTE

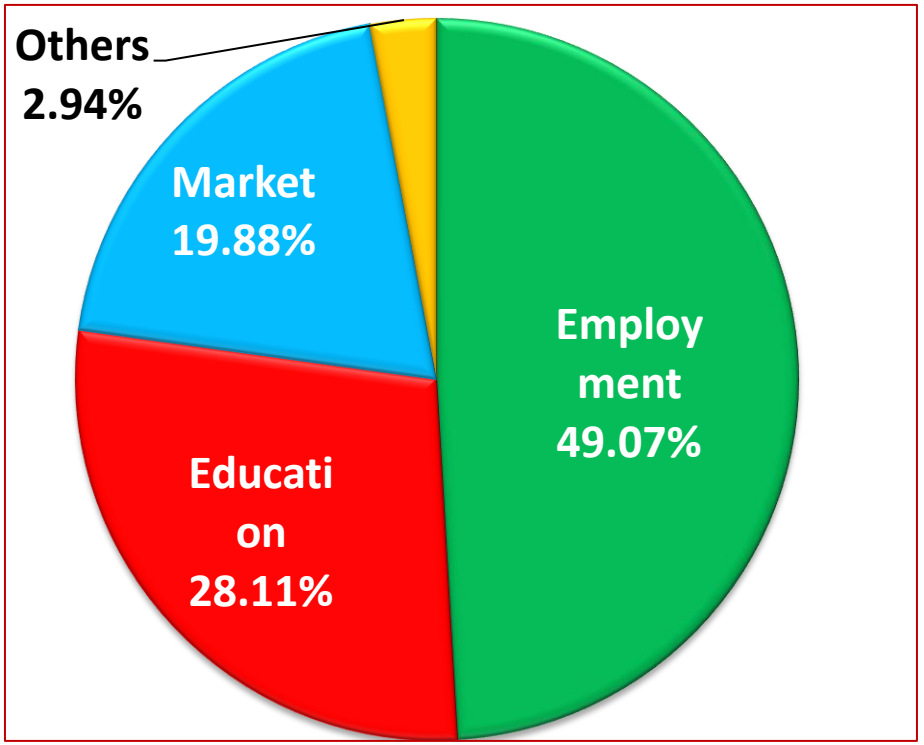
S No	Colony	Population
1	Vevekanand Nagar	1655
2	Banashankari nagar	2520
3	Old Oza Layout	3690
4	GDA Colony	6705
5	New Oza Layout	1620
6	Daraypur Kotnur Layout.	2161
7	Ashraya Colony	1590
8	Jamshetty Nagar	2155
9	Prashananth Nagar	7840
10	Balagi Nagar	1235
11	Rajapur badepur colony	5778
12	Pooja colony	4380
Total		41329

- **The Avge population Density Of the colonies …….4560/SqKm.**

CURRENT MODAL SHARE



PURPOSE OF TRIP



- Average auto occupancy : 3.62
- Average car occupancy : 3.12
- Average daily expenditure on travel Rs.29.00

- Survey Conducted to assess the Demand on the corridor
- To focus on travel pattern of residents and characteristics of trips

S No	Stop place	Peak hrs		Off Peak hrs	
		Access	Egress	Access	Egress
1	Sedam Road	115	98	81	69
2	Kusnur X	75	62	53	43
3	VTU	35	42	25	29
4	Prashanth Nagar	47	41	33	29
5	Shabad X	33	24	23	17
6	Balagi nagar	45	26	32	18
7	Railway ovrbridge	8	14	6	10
8	Naganhalli X	64	32	45	22
9	Ashraya Colony	38	32	27	22
10	Daraypur Kotnur Layout.	88	65	62	46
11	New Oza Layout	20	27	14	19
12	Oza Layout	106	85	74	60
13	Ram Mandir road	140	113	98	79
	Total	**814**	**661**	**570**	**463**

Expected Ridership

- Total no of people moving in and out of the corridor during the entire day :16081
- Considering the current bus share of 20% in the total no of passenger expected to travel by bus : 3216 per day.
- Average ridership per bus per day : 804
- Average ridership per trip: 27

RECOMMENDATIONS FOR MODES FOR LMC

1) Non Motorized Transport (NMT)

- No separate cycle track and footpath
- Safety issues
- This option is not viable in Kalaburagi

2) Auto/ Cabs

- Fare and time table integration issues
- Physical integration issues
- Institutional setup issues
- Path integration issues

WHY BUS?

- The ROW on the corridor is adequate for operations of buses.
- Better synchronising of time table because of single operator
- Expertise in managing Road Transport operations by NEKRTC.
- Buses are principal mode of travel in Indian cities due to their relatively low operating costs & high passenger capacities compared to other forms of transport
- Integration refers to both intramodal & intermodal

LMC OPERATION PLAN

- Efficient frequent & reliable service
- Operation under single management control

- No of Buses required : **4**
- Type of Buses: **Modern ,Midi (BSIII)**
- Seating capacity : **32+17 with cc camera**
- Schedule : **0700Hrs -2000hrs**
- No of Trips : **60**
- Headway: **10 Mts**
- Average passengers : **804/bus/day**
- Revenue : **Rs.5670/bus/day**
- **The projects will be implemented in single phase.**

COST ANALYSIS

- No of Buses required for LMC 4
- The approximate cost workouts Rs. 108.00Lakhs

Cost components,

- Capital cost
- Operation Cost
- Maintenance Cost.

FARE

Stage	Fare (in Rs)
1	5.00
2	6.00
3	7.00

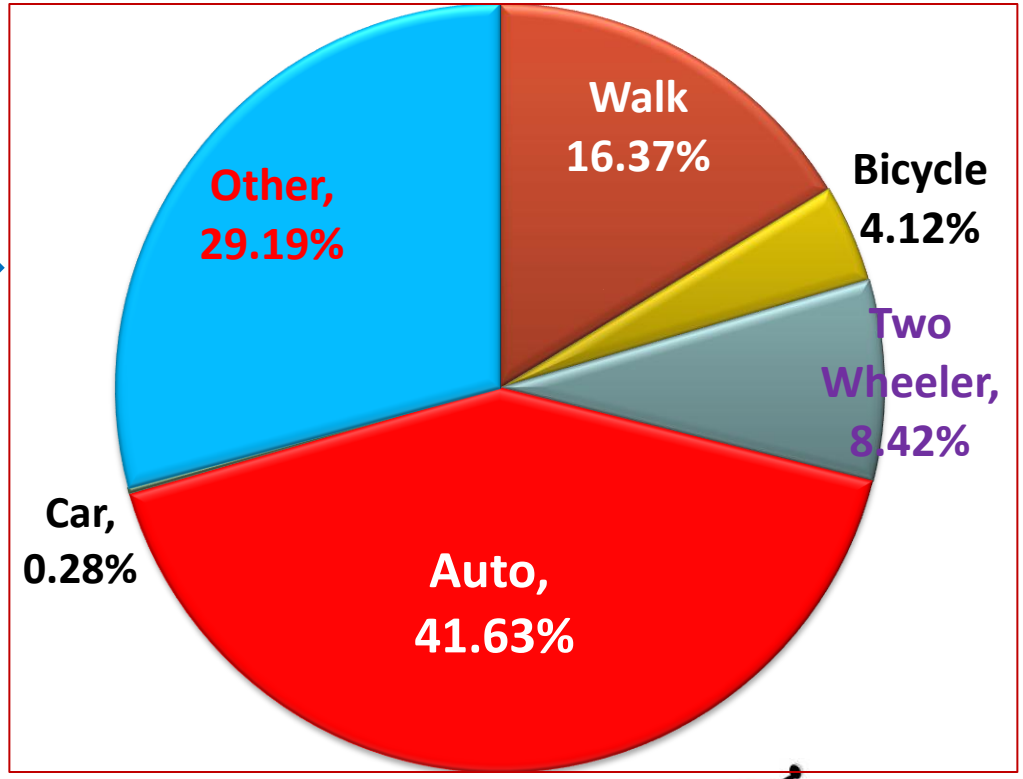
FINANCIAL SUSTAINABILITY

•Avg. fleet Utilization	…….	90%
•Avg. Vehicle Utilization	…….	189 kms / bus.
•Avg. load factor	…….	85%
•Avg. fare per passenger	…….	Rs. 5.00.
•Daily expected Revenue	…….	Rs. 5670.00 /bus
•Other Revenue	…….	Rs. 850.00/bus/Month
•Total Revenue	…….	Rs.170950.00/bus/month
•KMPL	…….	5.75
•Total operation cost per KM	…….	Rs.38.00
•Total Revenue per Kms	…….	Rs. 30.00
•Total Revenue per Kms (including pass amount)	…….	Rs.37.15
•Profit / loss statement	…….	-Rs. 8.00 per Km
•Profit/loss (including pass Revenue)	….	-Rs. 1.15 per Km
•FRR (Excluding pass Revenue)	…….	0.79
•FRR (Including pass Revenue)	…….	0.98

EXPECTIONS AND BENEFITS OF THE PROJECT

- Efficient And Seamless Mobility Of People
- Increase the ridership of public transport systems in competition with private & other modes.
- Expect a high level of modal share by attracting more passengers especially walk, two wheelers, Autos, and other

EXPECTED MODAL SHIFT



EXPECTIONS AND BENEFITS OF THE PROJECT

- **Reducing,**
  - Traffic congestion
  - Carbon Footprint
  - Air and noise Pollution
- **Step towards to meet commitment of COP21**
  - Fatalities caused by accidents.

- **Saving In,**
  - Fuel
  - Energy conservation
  - Money
  - Journey & wait Time

- Increasing property values and fostering economic development,
- Provides personal mobility &freedom for people from every walk of life.
- Discouraging personalized vehicle

CONCLUSION

- The basic motto is to discourage use of personalized motorized modes and to promote public transport accessibility to larger section of population.
- Improvement in quality of urban life by providing safe, economical & convenient means of Transportation to first mile-last mile connectivity.

RECOMENDATION

SHORT TERM

1. The project has been taken up for a single corridor in the city on a pilot basis, it can be replicated for other corridors in the city and other cities also
2. The fleets of STUs can include small vehicles to penetrate deep into the cities by operating in the corridors with narrow road width.
3. AFC shall be introduced to operate small buses with a single crew redressing the problem of higher staff cost.
4. The other stake holders like Municipal, Police and Local development authorities should also be included in the exercise.
5. Other IPTs shall be integrated into the system for deeper penetration.

LONG TERM

1. Finding an Unified authority to have control over the different stake holders involved in the exercise to shoulder the responsibility like land use policies and transport investment.
2. Rebalancing the investment giving due importance to walking and cycling.
3. Plan to pedestrian design guide, street furniture, and space for hawkers etc.

….socially inclusive, environmentally Sustainable, economically feasible urban mobility

Eco Mobility

THANKING YOU

Contact @

kotrappa1963@gmail.com

suresh.pattar8@gmail.com

klgudennavar@gmail.com