

# 10<sup>th</sup> Urban Mobility India Conference

## Role of Informal Public Transport A Case of Kanpur, Aligarh and Hathras, UP (India)

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# BACKGROUND OF THE STUDY

Increase in Population

Spread of City Boundaries

Increase in Travel

Increase in Private Vehicles

Concern for Poor people

Incapability of purchasing Personal Vehicles

Poor transport – Cutting poor from Job opportunities

Proper Connection between people and activities

Need for Affordable and Sustainable PT

Formal PT is not feasible everywhere

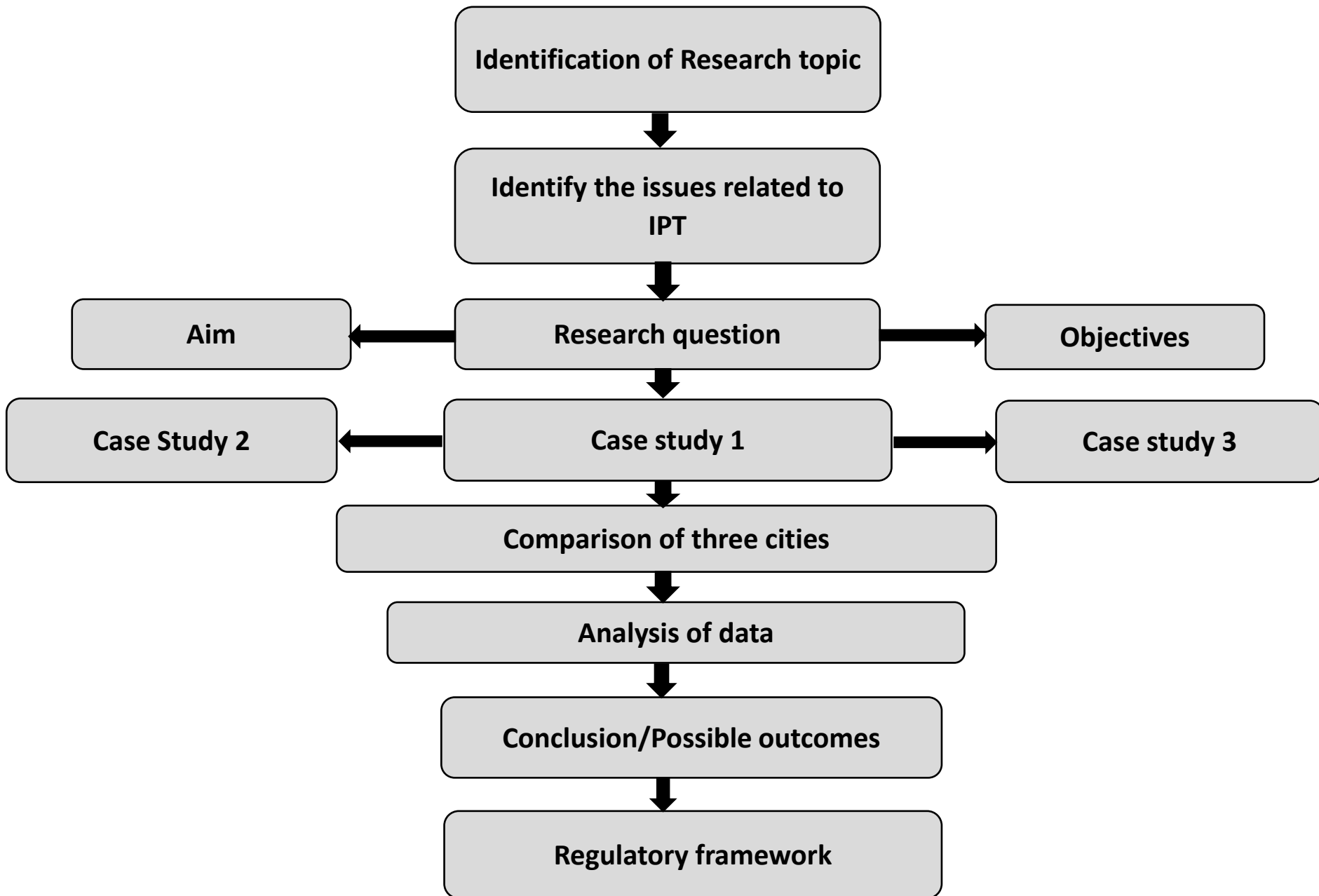
Depends on City Planning and Road Pattern

PT requires large funds and physical infrastructure

Need for supporting PT

IPT plays diverse roles depending upon various characteristics

- IPT plays an wide-ranging of roles depending upon the city size, nature and available transport systems in the city
- This variety and evolving role of IPT often makes it a competitor to other modes, especially formal PT
- There are guidelines for the Public Transport depending upon their type and range of services.
- There has no specific guidelines defined for IPT anywhere in the Asian developed countries
- Therefore, it makes difficult to regulate
- Issues of consumer and societal interests in terms safety, security and environment are also matters of concern
- So, there is a need for the guidelines for regularization of IPT according to their various roles which defines their scope, limitations, service range, service quality etc.
- Which enables it to support the formal PT instead of competing with it and make their services of which it provides their services efficiently and support the PT instead of competing it



# EXISTENCE OF CURRENT IPT & PT SYSTEM CHARACTERISTICS

City	Public Transport System	Intermediate Public Transport System
<b>Ahmedabad</b>	<ul style="list-style-type: none"> <li>➤ AMTS bus service- initiated in 1947,1022 buses on 194 routes</li> <li>➤ BRTS service – initiated in 2009</li> <li>➤ Metro Rail Service – Under construction</li> </ul>	<ul style="list-style-type: none"> <li>❑ Auto Rickshaw – 3 Seater Capacity <ul style="list-style-type: none"> <li>• Operates as personal hired vehicle</li> <li>• Connects one destination to any other in the city on a pre-decided per km, meter based fare basis</li> </ul> </li> <li>❑ Auto Rickshaw – 6 Seater Capacity <ul style="list-style-type: none"> <li>• Shuttle shared auto service</li> <li>• Pre-decided fixed fare basis</li> <li>• Point to point service</li> <li>• Known as “chhakdas”</li> <li>• Illegal operations</li> </ul> </li> <li>❑ 3 Seater auto rickshaws also ply as “shuttles” accommodating to even 6 passengers as an illegal practice</li> </ul>
<b>Nadiad</b>	<ul style="list-style-type: none"> <li>➤ Municipality started city service on 3 routes, suited to train and bus arrivals to cater commuting crowd.</li> <li>➤ Faced resistance from GSRTC, eventually service was stopped</li> </ul>	<ul style="list-style-type: none"> <li>➤ Passenger Auto Rickshaw – 3 Seater Capacity</li> <li>➤ Plies predominantly as “shuttle” than private auto service</li> <li>➤ Cover almost all the routes in the city with minimum fare charge of Rs 5.</li> <li>➤ Accommodates 4-5 passengers on an average per trip.</li> <li>➤ Passenger Auto Rickshaw – 6 Seater operates as a commuter service providing facility of connecting Nadiad to surrounding smaller villages and towns</li> </ul>
<b>Surat</b>	<ul style="list-style-type: none"> <li>➤ Surat City bus service – initiated in 2008, 80 buses on 42 routes and closed recently</li> <li>➤ New City bus service started in Nov. 2016 with around 240 buses on 27 routes</li> <li>➤ BRTS service started in Jan. 2014 on 9 routes with around 120 buses</li> </ul>	<ul style="list-style-type: none"> <li>➤ Auto Rickshaw – 3 Seater Capacity</li> <li>➤ Operates as personal hired/shared vehicle.</li> <li>➤ Connects from one destination to any other in the city on a pre-decided fixed fare basis</li> <li>➤ Minimum fare for 1 Km is Rs 4-5 and increases to Rs 7</li> <li>➤ Dominantly ply as “shuttles” accommodating to even 5-6 passengers as an illegal practise</li> <li>➤ Passenger Auto Rickshaw – 6 Seater operates as a commuter service providing facility of connecting Surat to surrounding smaller villages and towns</li> </ul>

# FINDINGS FROM LITERATURE STUDIES

Specifics	Issue	Opportunity
Perception	➤ Negative perception about auto-rickshaw services among policy makers, regulatory authorities, and passengers.	➤ Creation of Distinct brand image for the sector and improvement in public perception for auto-rickshaw services.
Regulation	<ul style="list-style-type: none"> <li>➤ Lack of transparent permit policies.</li> <li>➤ Lengthy paper work and documentation</li> <li>➤ Frequently subjected to bribes and fines by authorities</li> <li>➤ Lack of formal fare policies in some cities</li> <li>➤ Lack of transparency in fare policies</li> <li>➤ Lack of standard analytical framework in fare setting</li> </ul>	<ul style="list-style-type: none"> <li>➤ Permit and Licensing procedure to be made transparent and easy to understand by the drivers.</li> <li>➤ Representatives should be made actively involved in fare setting and decision process</li> </ul>
Driver Practices	<ul style="list-style-type: none"> <li>➤ Rude behavior</li> <li>➤ Rash Driving</li> <li>➤ Dishonest</li> </ul>	➤ Official Training should be imparted in order to control driver behavior.
Financing	➤ Financing issues from government / private banks and dominance of private financiers.	<ul style="list-style-type: none"> <li>➤ Official Paperwork to be made simpler</li> <li>➤ Banks to be more cooperative</li> </ul>
Driver Benefits	➤ No social Recognition from government provided	➤ Government to involve in providing formal recognition and other benefits- Insurance, advertising
Infrastructure	➤ Lack of provision of adequate stands and inadequate amenities at stands	➤ Provision of adequate infrastructure in reference to registered auto rickshaws

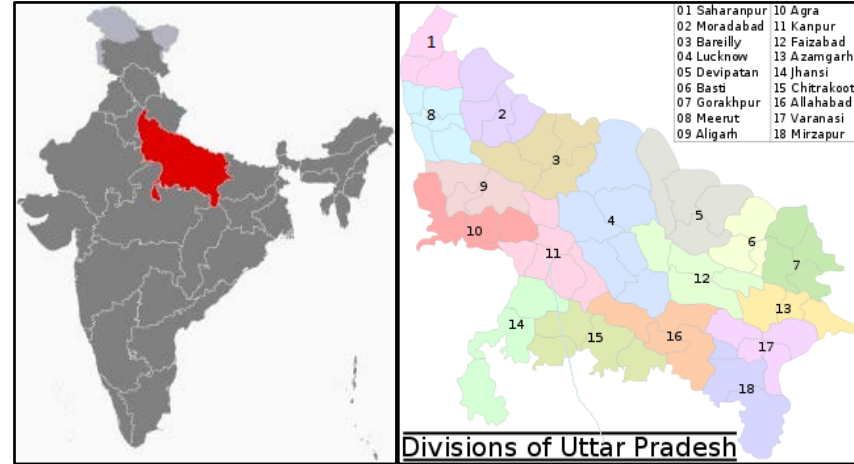
## OTHER PREDOMINANT ROLES OF IPT

- ✓ Connects the core of the city with the important centers, with high density residential areas.
- ✓ Connects the core of the city with the periphery and with nearby rural areas
- ✓ Connects the different rural areas and one city with another
- ✓ Connects a persons directly from his/her home to the destination
- ✓ Directly connects the important locations of one city with another city
- ✓ Some taxis are operated anywhere as a National permit
- ✓ Hired for the institution on regular basis operation within and outside the city
- ✓ Majorly runs on the trunk line to connects the different parts of the city
- ✓ Operated as a feeder for the formal Public Transport
- ✓ In a small budget it serves the areas with narrow road network pattern
- ✓ Filling up the mobility gap (satisfying the increasing demand by increasing the supply)
- ✓ Better than the formal public transport(fixed time and route), more flexible
- ✓ It is helpful, as it considering the socio economic pattern of the city, and provides cheaper services to all income groups without replacing other modes of public transport
- ✓ It has a potential of providing large scale of employment (in all sizes of cities)

# CITY PROFILE OF SELECTED CITIES

## Uttar Pradesh

- Most populous State in India with a population of 199,281,477 habitants and area of 2,40,928 Sq. Kms.
- Located in the Northern region of Indian Sub-continent.
- It is divided into 18 divisions



Location of UP on map of India

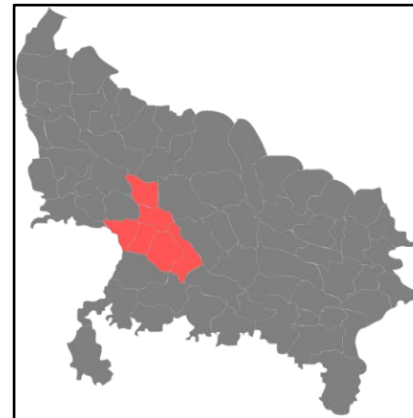
Divisions of UP (18)

## Three selected cities of Uttar Pradesh

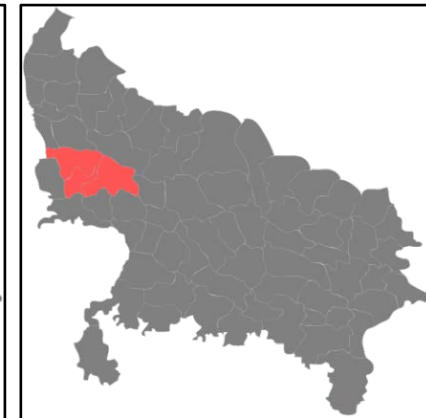
- The cities selected for study purpose are Kanpur, Aligarh and Hathras which lies in Kanpur and Aligarh division respectively.

## Selection Criteria

- The selected cities have different public transport characteristics i.e. presence or absence of formal public transport.
- The cities have different size in terms of population and area which were selected for comparison study of Informal Public Transport







Kanpur Division (11)



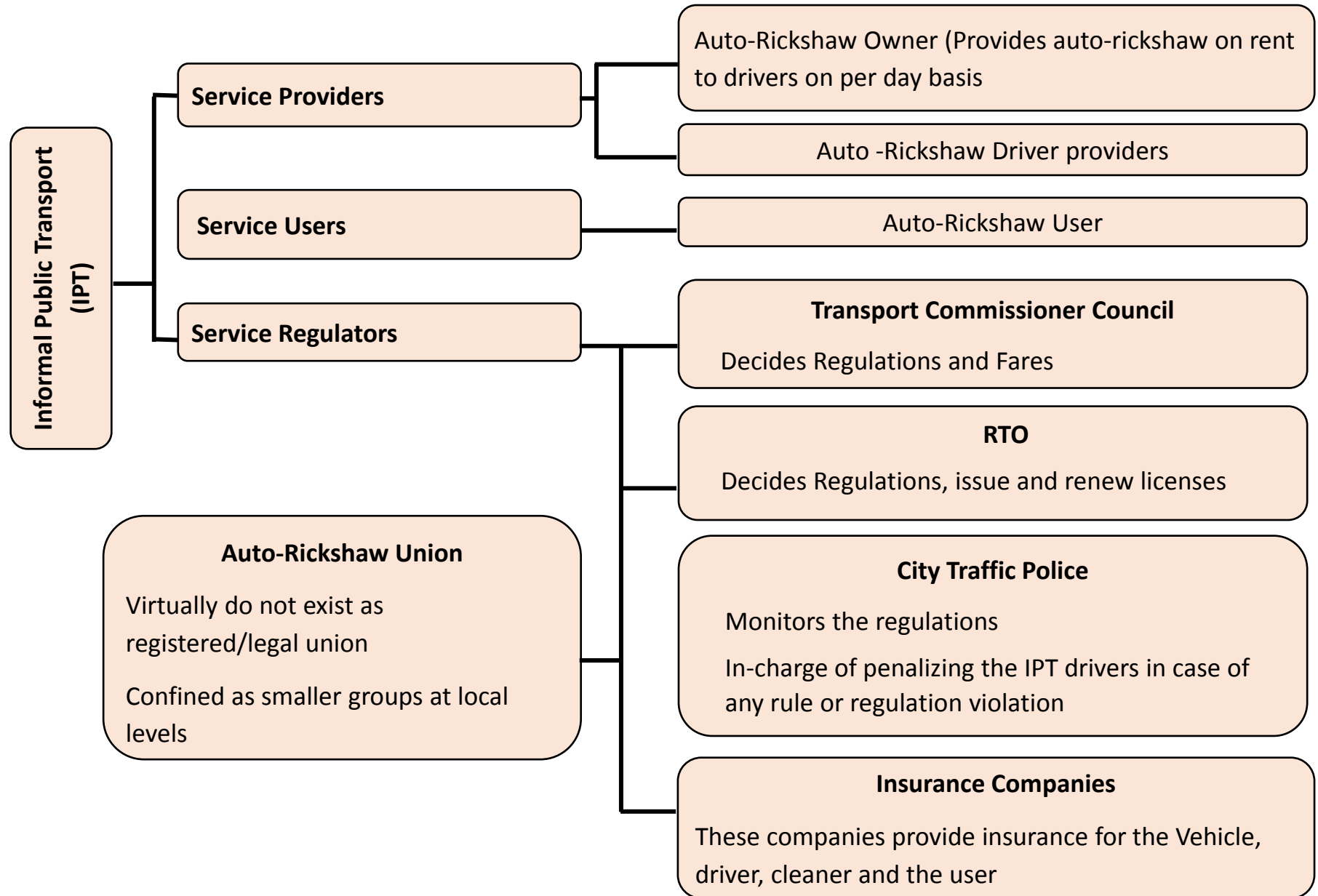
Aligarh Division (9)



# DEMOGRAPHICS

	Kanpur	Aligarh	Hathras
<b>Known as/for</b>	<b>Manchester of East/ An important industrial centre</b>	<b>An important business centre/famous for its lock industries</b>	<b>Famous for its Industrial, Literature related and cultural activities as a part of Aligarh</b>
<b>Population(Census 2011)</b>	27,65,348	8,74,408	1,35,594
<b>Projected Population (2031)</b>	43,90,266	13,18,164	1,86,218
<b>Area(Municipal Area)</b>	261.50 Sq. km	40 Sq. km	30 Sq. km
<b>Average Literacy</b>	82.42 %	68.52 %	77.10 %
<b>Sex Ratio</b>	857	894	880
<b>Zones</b>	6	-----	-----
<b>Wards</b>	112	70	-----
<b>Public Transport</b>	<b>In the form of JnNURM buses, private buses and IPT(Auto-Rickshaws, Tempos, Cycle-Rickshaws and E-Rickshaws)</b>	<b>In the form of private buses and IPT(Auto-Rickshaws, Tempos, Cycle-Rickshaws and E-Rickshaws)</b>	<b>In the form of IPT (Auto-Rickshaws, Tempos, Cycle-Rickshaws and E-Rickshaws)</b>
			

# STAKEHOLDER INVOLVEMENT



# IPT MODES IN KANPUR, ALIGARH & HATHRAS



**Cycle -Rickshaw**



**E -Rickshaw**



**Auto-Rickshaw (Shared)**



**Tempo**



**Private Bus in Kanpur**



**Private Bus in Aligarh**



**OLA Taxi**



**Private Taxi**



**Private buses and auto stand**



**Auto-Rickshaws in Aligarh**



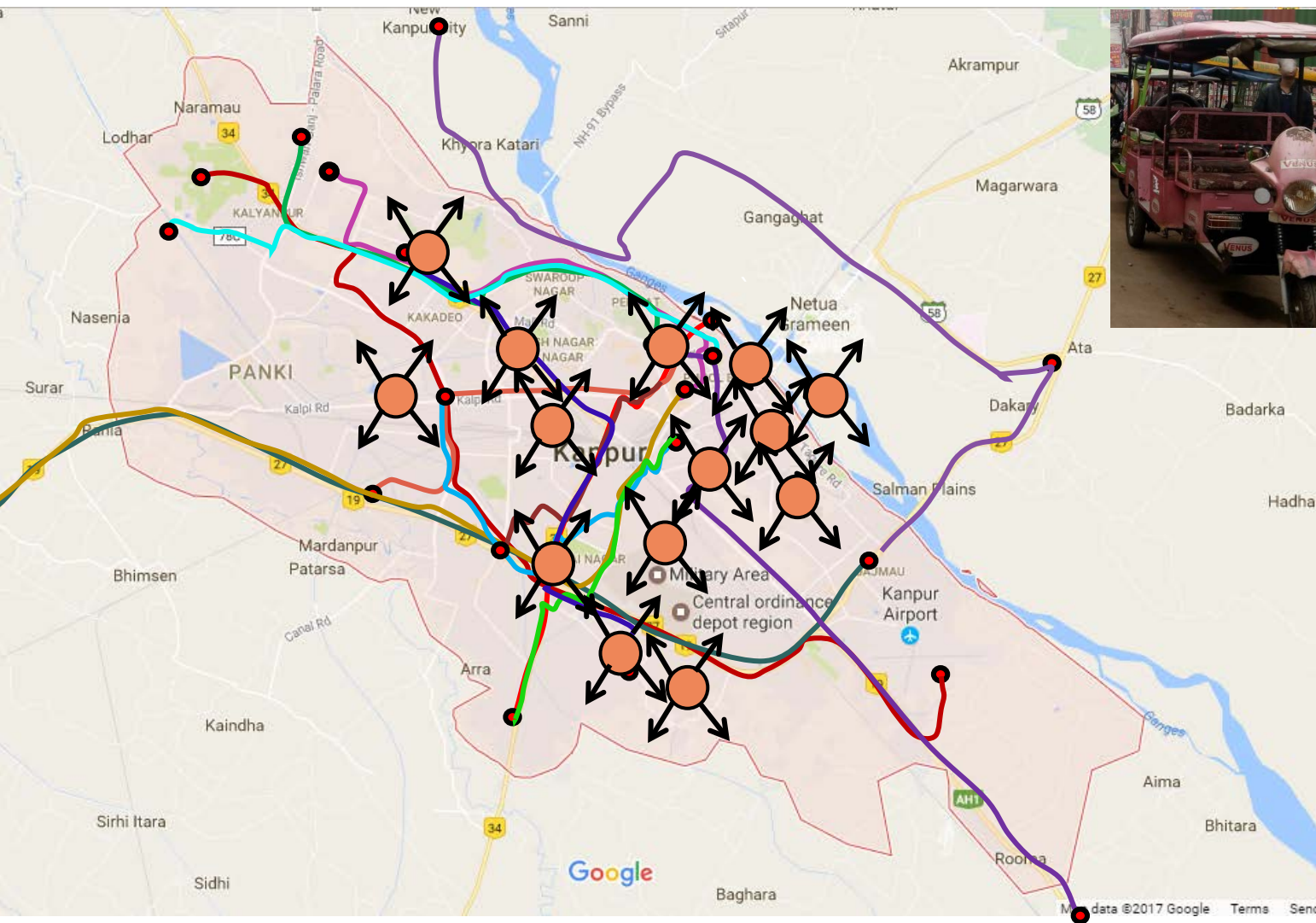
**Auto-Rickshaws and E-Rickshaw**



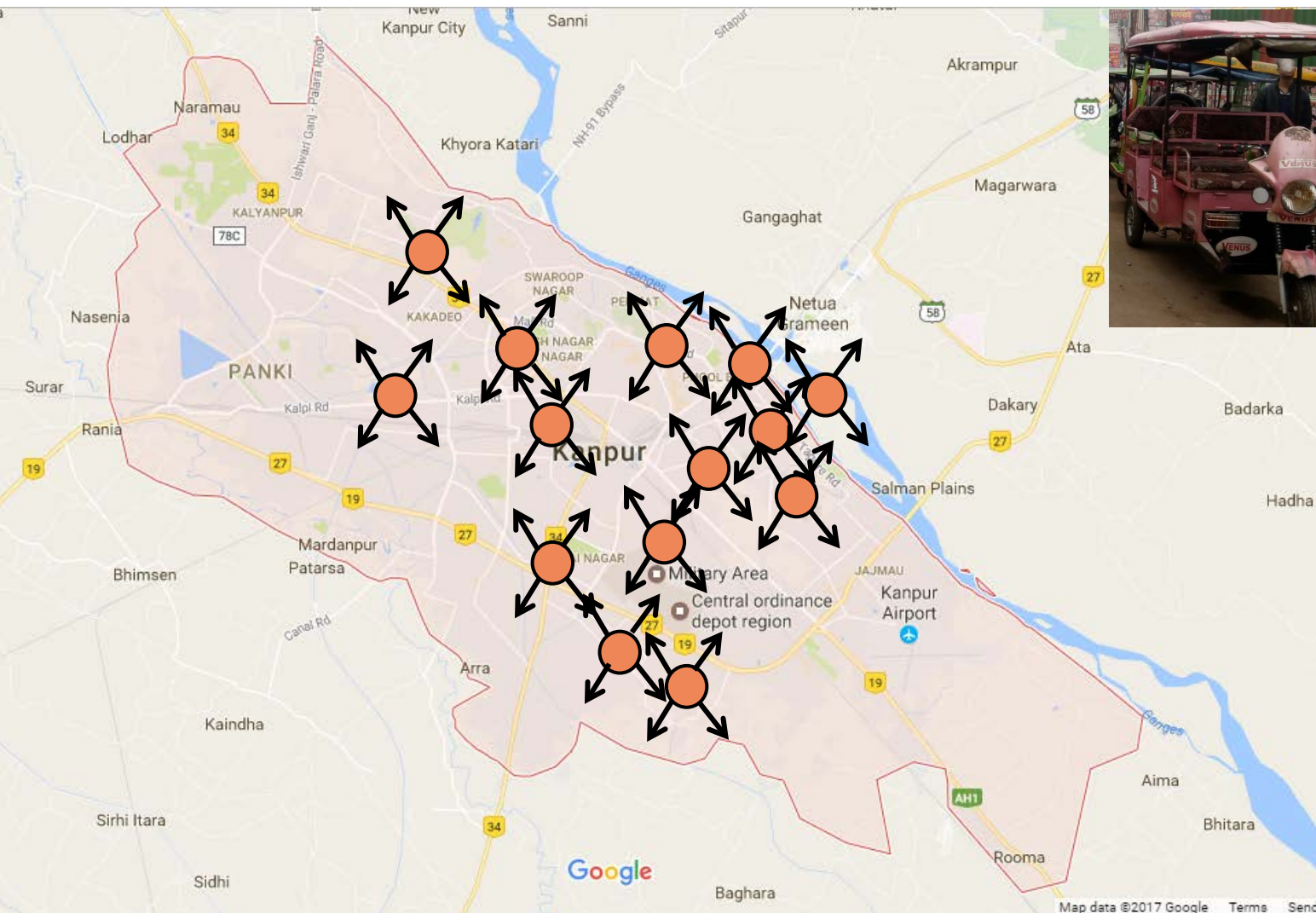
**Tempo stand in Kanpur**



# IPT MODES IN KANPUR, ALIGARH & HATHRAS

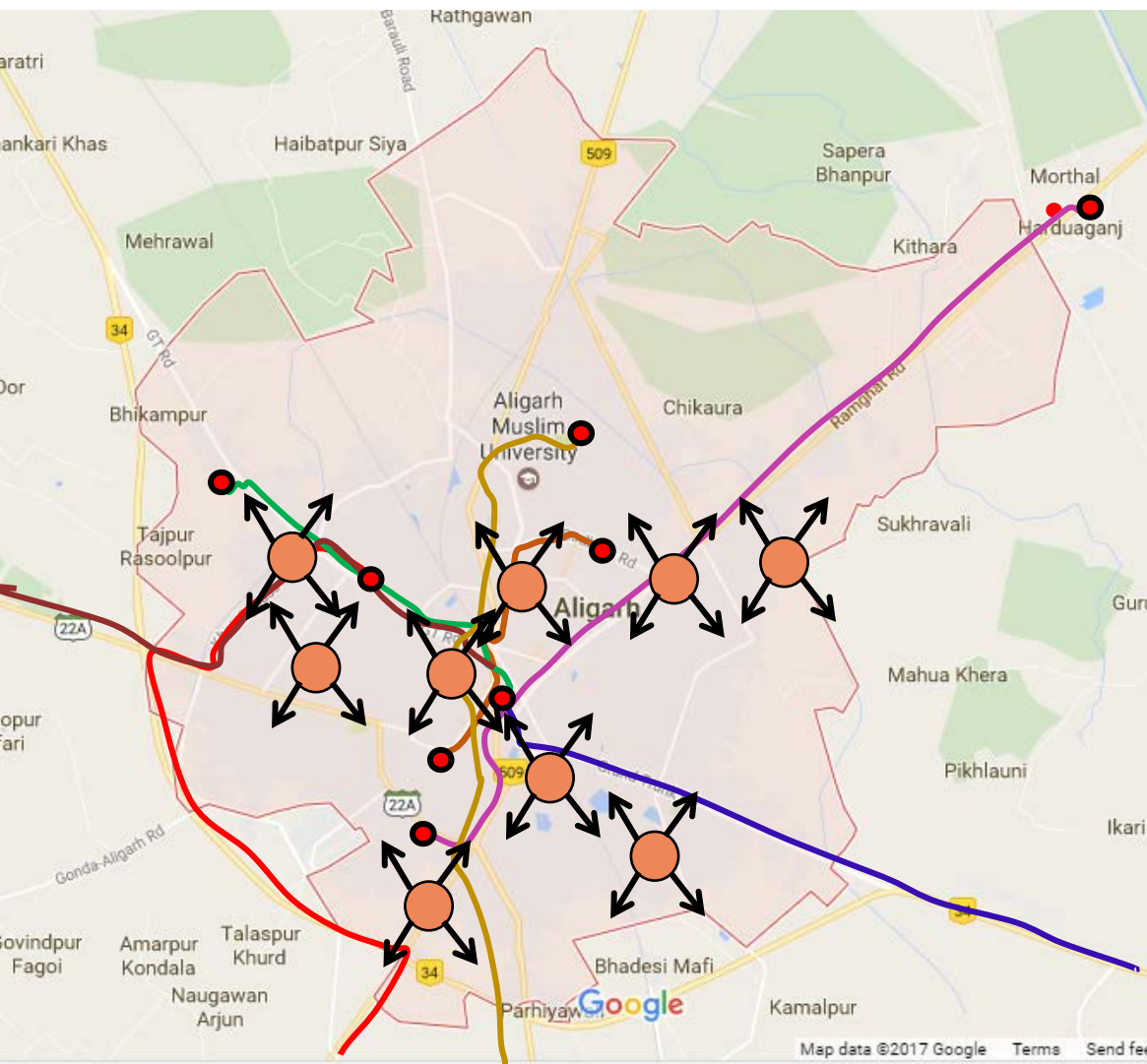


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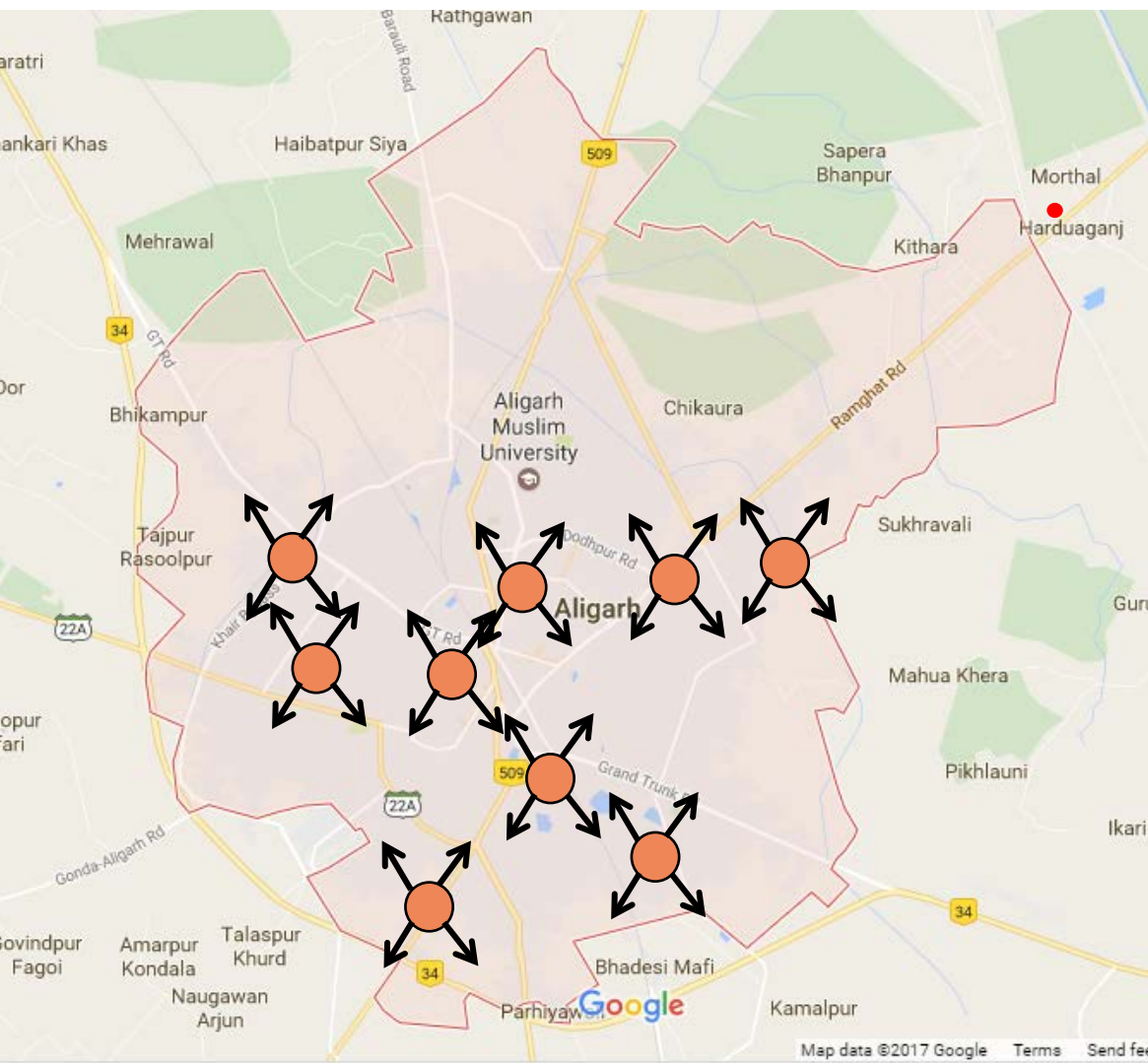




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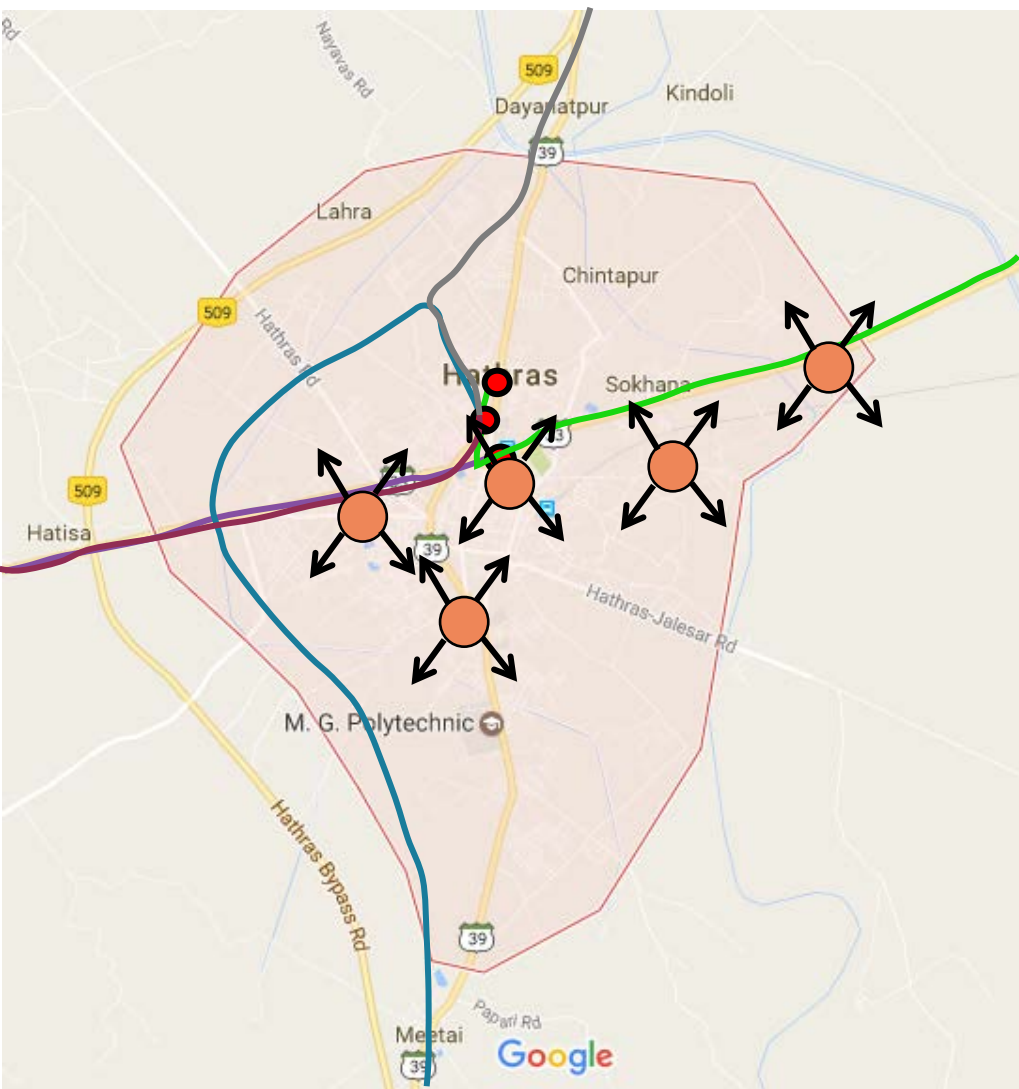


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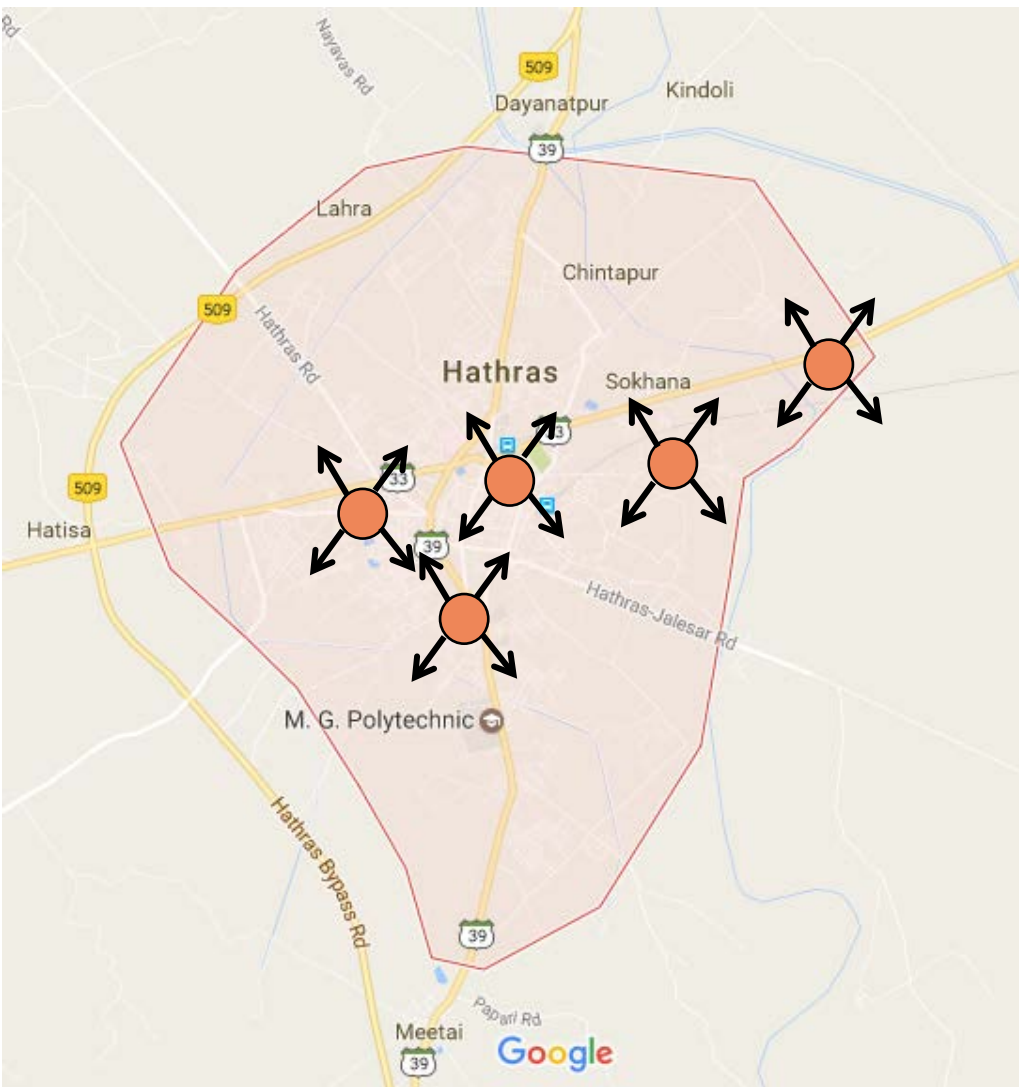


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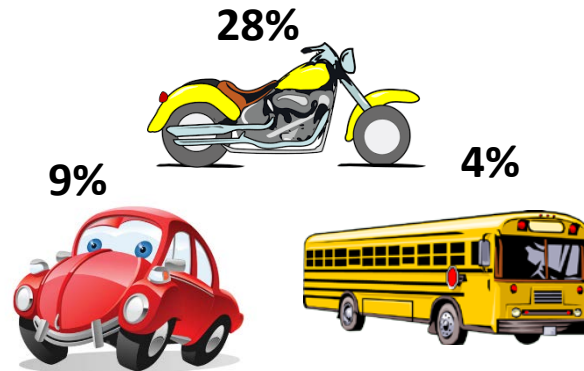




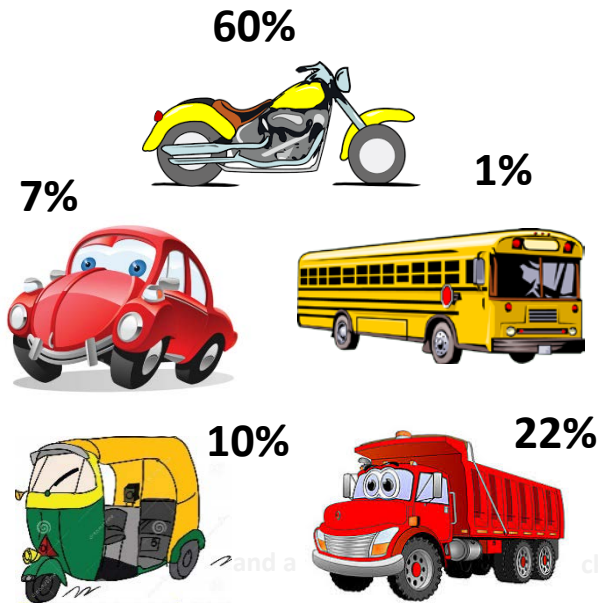
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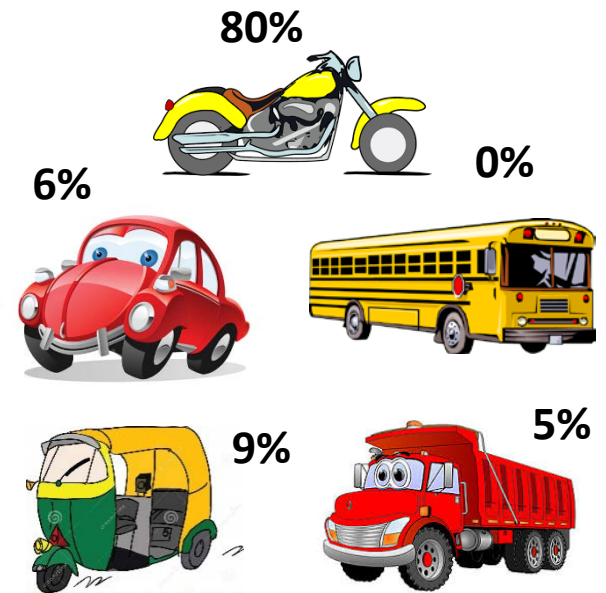
# MODE SHARE IN KANPUR, ALIGARH & HATHRAS



KANPUR



ALIGARH



HATHRAS

# FUNCTIONS OF IPT

## KANPUR

- IPT functions both as the main mode and as the feeder for the formal bus service
- Private buses connects the city with nearby rural areas
- Aggregated taxis provide door to door services with comfortable ride and also available with different ride packages
- Auto-Rickshaws and Tempos are available in two shifts
- Private buses are competitors for the formal bus service as both run on same routes
- Cycle-rickshaws and E-Rickshaws provide services in areas with narrow roads

## ALIGARH

- Private buses provide services for long routes (from city to nearby rural areas and towns)
- Auto-Rickshaws and Tempos runs on fixed routes connecting important centres
- Few Tempos and Maxi-cabs also provide services to nearby rural areas
- E-Rickshaws run mostly on minor roads and few on major roads
- Cycle-Rickshaws runs I core city area and in areas with narrow roads and old city area

## HATHRAS

- Tempos and few Maxi-cabs provide long route services i.e. connecting the city with nearby towns and villages
- Auto-Rickshaws run outside the core city area for short distance trips
- E-Rickshaws and Cycle-Rickshaws run in the core of city as core having narrow roads
- E-Rickshaws and Cycle-Rickshaws are also used for transferring goods

# OPERATIONAL CHARACTERISTICS

S.No.	Vehicle type	Designed seating capacity	Operational technology	Fuel technology	Speeds (KM/Hr)	Permit	Average operating cost (per Km)	Average earnings (per Km)	Average vehicle rent (Daily)	Fare
1	Cycle-Rickshaw	2	Non-motorized	Paddle system	10-15	Municipal Boundary	Re 1	4	Rs 50	Min. =Rs 10 Rs 10/Km
2	E-Rickshaw	4	Motorized	Battery	25	Municipal Boundary	Rs 1.6/Rs 4 (Rent)	Rs7.6/Rs 10 (Rent)	Rs 300	Min.=Rs 5 Rs 5/Km
3	Auto-Rickshaw (Private)	3	Motorized	CNG	30-40	Municipal Boundary	Rs 2	Rs 5	Own	Rs 13 for 1.3 Km Rs 10 -12 /Km
4	Auto-Rickshaw (Shared)	3	Motorized	CNG	40	Municipal Boundary	RS 3/ Rs 6 (Rent)	Rs 8/Rs 11 (Rent)	Rs 500	Min. =Rs 5 Rs 2-4/Km
5	Tempo (Vikram)	6	Motorized	CNG & Diesel	35-40	Municipal Boundary	RS 3/ Rs 6 (Rent)	Rs 7.5/Rs 10.5 (Rent)	Rs 500	Min. =Rs 5 Rs 1.5-2/Km
6	Minibus	32	Motorized	Diesel	40-45	Municipal Boundary	Rs 25	Rs 30	Rs 20000 (Loan)	Min. =Rs 5 Rs 1/Km
7	Aggregated Taxi (OLA Taxi)	4	Motorized	CNG	40-45	Municipal Boundary	Rs 7	Rs 13	Own	Min.= Rs 40 Rs 12/Km Rs 2 Waiting/Min.
8	Private Taxi	6	Motorized	CNG	40	State Permit	Rs 4	Rs 7	Own	Rs 6-14/Km

# FINDINGS FROM THE OPERATOR SURVEY

S.No.	Parameters	Auto-Rickshaw	Cycle-Rickshaw	E-Rickshaw	Tempo
1	<b>Educational Qualification</b>	40% of the drivers have Primary and Secondary, and 20% are uneducated			
2	<b>Residence Ownership</b>	Most of them are residing on rent			
3	<b>Residence Location</b>	Maximum drivers live in the City, some in Rural areas and very few come from the outside City/Rural area			
4	<b>Bank Account holders</b>	Around 60% of the drivers have Bank Accounts and 40% have not			
5	<b>Mobile phone holders</b>	60% of the drivers have normal phone,20% have Smart phone and 20% have no phone			
6	<b>Vehicle Insurance holders</b>	80% of the drivers have renewed vehicle insurance, 20% have not			
7	<b>Personal Insurance holders</b>	Only 20% of the drivers have their personal insurance, and rest 80% have not			
8	<b>Business reason</b>	70% people came into business to earn higher income and 30% came because they did not find any job			
9	<b>Vehicle Ownership</b>	Approximately 35% drivers own their vehicle and rest 65% took the vehicles on rent (daily or monthly basis)			
10	<b>Kilometres travelled/day</b>	80-100 Kms/day	30-50 Kms/day	50-80 Kms/day	80-100 Kms/day
12	<b>Personal Income</b>	10,000-15,000 monthly	5,000-10,000 monthly	15,000-20,000 monthly	10,000-15,000 monthly
13	<b>Specific Route</b>	75% follow the route	Only few	Only 20% follow the route	78% follow the route
14	<b>Fare</b>	Min Rs 5 and max on distance basis	Min Rs 10 and max. on distance and location basis	Min Rs5 and max on distance basis	Min. Rs5 and max. on distance basis
15	<b>Working hours/day</b>	12 hrs	12-15 hrs	8-10 hrs	12 hrs
16	<b>Maintenance/month</b>	Approx. Rs 3000/month	Approx. Rs250/month	Approx. Rs1000/month	Approx. Rs 3000/month

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## Choice of mode – IPT is preferred over PT

- Easily available everywhere in the city in different forms
- Less waiting time as compared to the public transport
- Comfortable (if not oversupplied)
- Door to door services
- Affordable fare (personal hire Auto-Rickshaws and aggregated taxis are expensive)
- Luggage can be easily transferred
- Hired for family functions

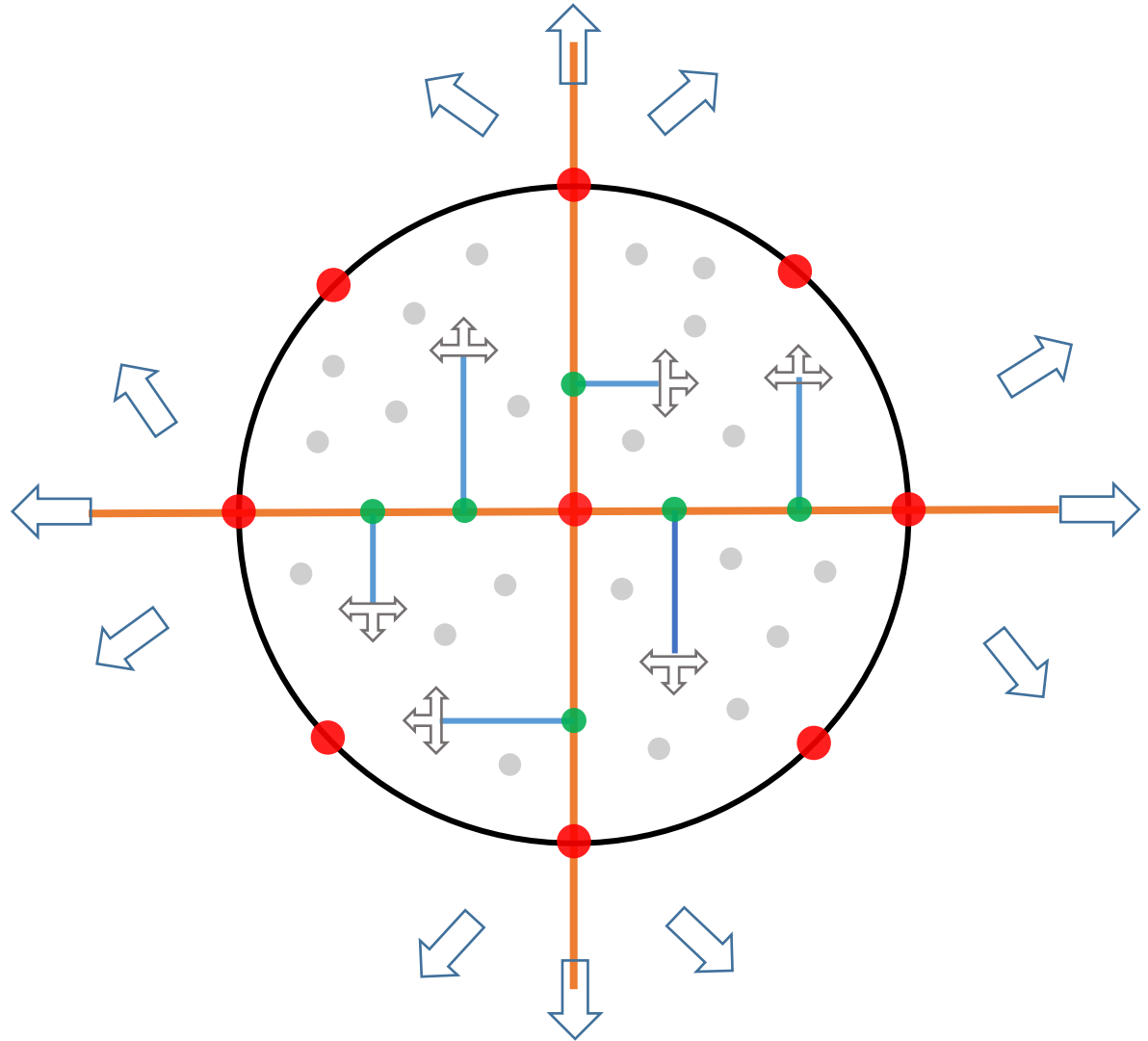
## Suggestion

- **Proper stands and stops** are provided for IPT
- Every IPT modes must be **managed by some union**
- **Enforced in terms of seating capacity and rash driving**
- **Bribes should be banned** (It makes fare higher)
- **Regular training programs** must be organized for the drivers
- There must be a **complaint authority**
- **E-Rickshaws should be regularized** (as they run anywhere and everywhere without any enforcement) . . .



# RECOMMENDED STRATEGY – FOR SMALL SIZE CITY

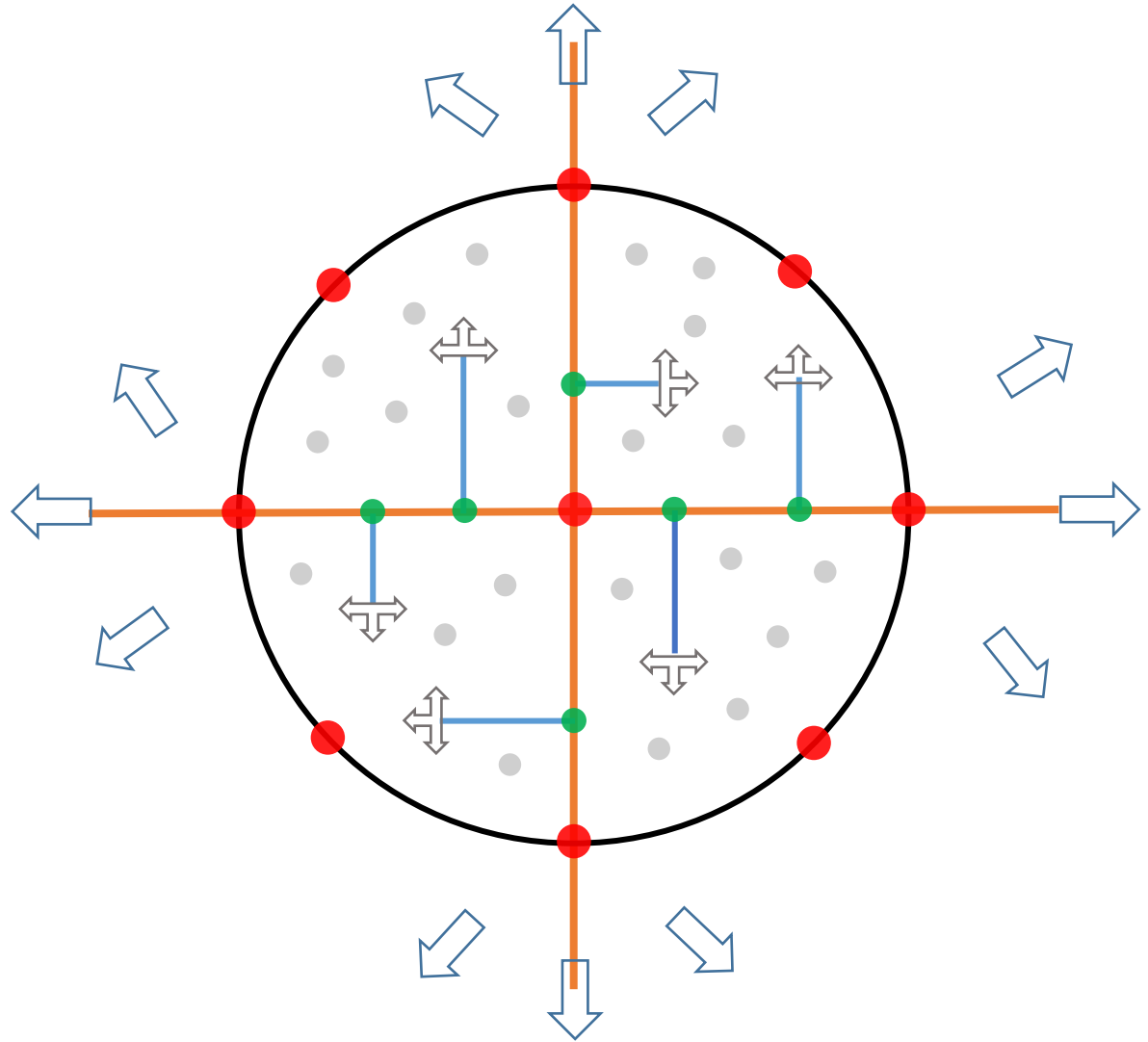
- Divide the city area into multiple blocks
- Allot these blocks to the IPT operators according to the type of IPT(Slow moving and fast moving)
- Then, restrict them to use some unique ID or Registration for particular block to reduce the completion between different IPT
- Enforce them according
- Fix the number of registered auto in that particular block to reduce the oversupply
- Vehicle registration can be transferred only after fix number of vehicles.





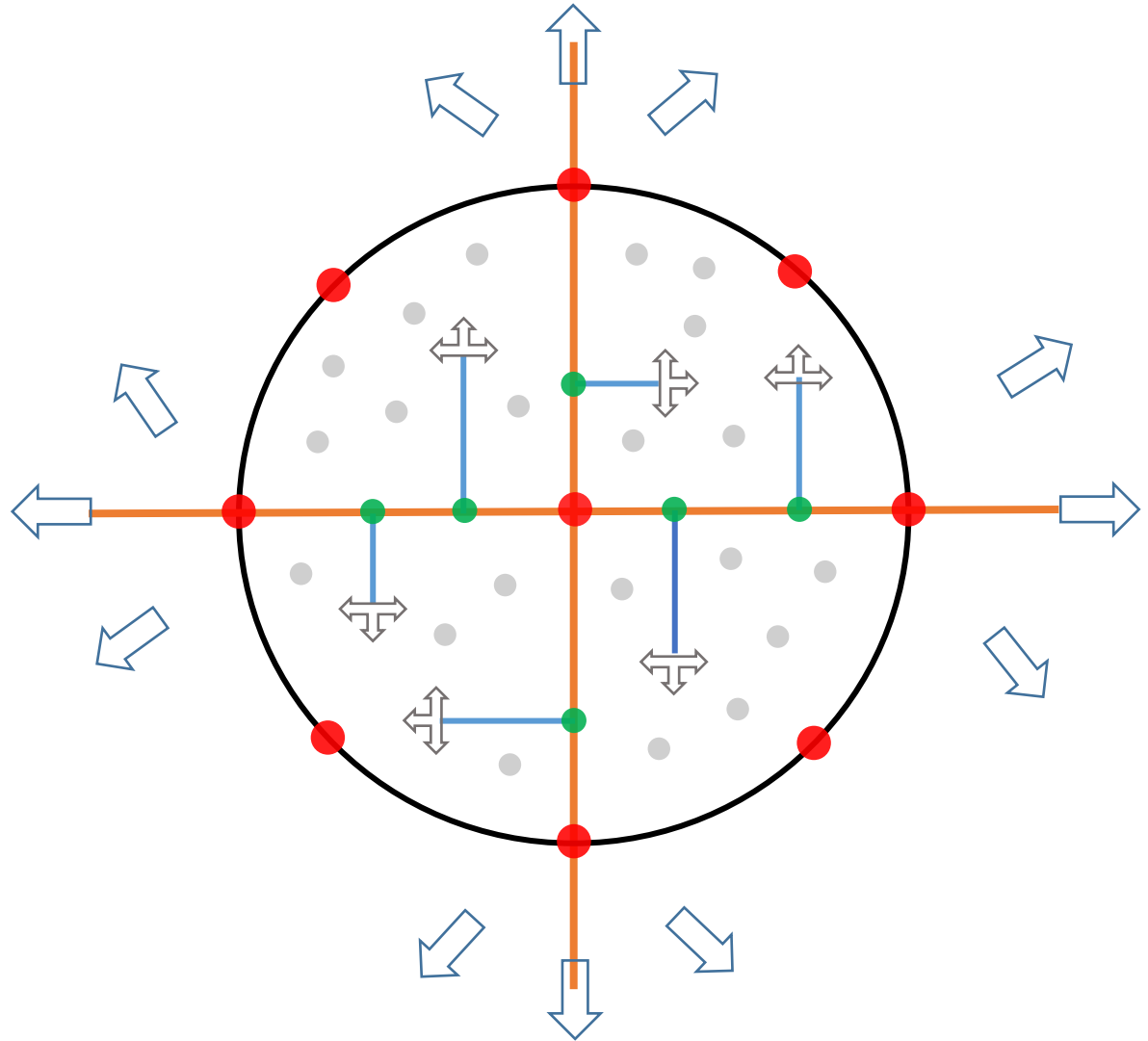
# RECOMMENDED STRATEGY – FOR MEDIUM SIZE CITY

- For the medium city, either provide new IPT registration for other areas or allow the private bus operators to operate on trunk line
- Or provide the city bus service as per the feasibility of the city
- Restrict the IPT to run on trunk line which will reduce the competition between PT and IPT



# RECOMMENDED STRATEGY – FOR LARGE SIZE CITY

- Use the hierarchy system to operate both PT and IPT
- PT will serve the high mobility corridor and the major trunk line
- IPT will serve the PT as a feeder and operate in those areas also where difficult to provide bus service because of lesser ROW. That will be complementary to the bus service.
- Provide particular activity areas to different IPT modes in cluster, like restrict them to residential areas, activity areas etc.
- This will reduce the overlapping of PT and IPT and also the competition between them



- Prepare other strategies to develop a model and guidelines for IPT System according to city characteristic
- Municipal Corporation can use these models or strategies to prepare the feasibility study for their city
- Comparison between same size cities for IPT system – which will identify different issues for that particular size city

**Thank You**