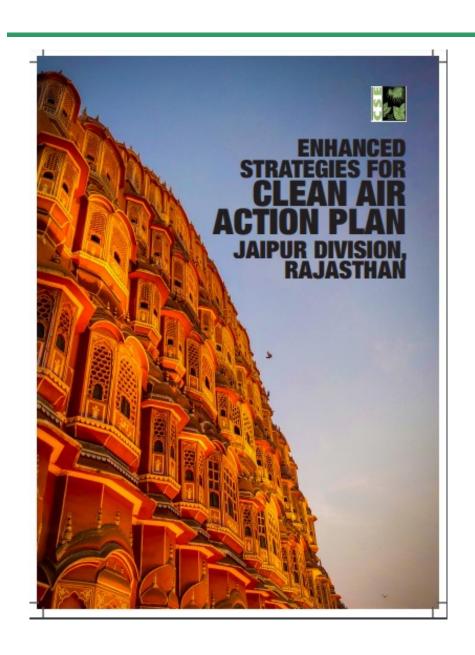
Vehicles and mobility





Shantanu Gupta Centre for Science and Environment

Meeting: Clean air action plan for Jaipur region: Building enhanced multi-sector Strategies

December 23, 2020

District wise registered vehicles

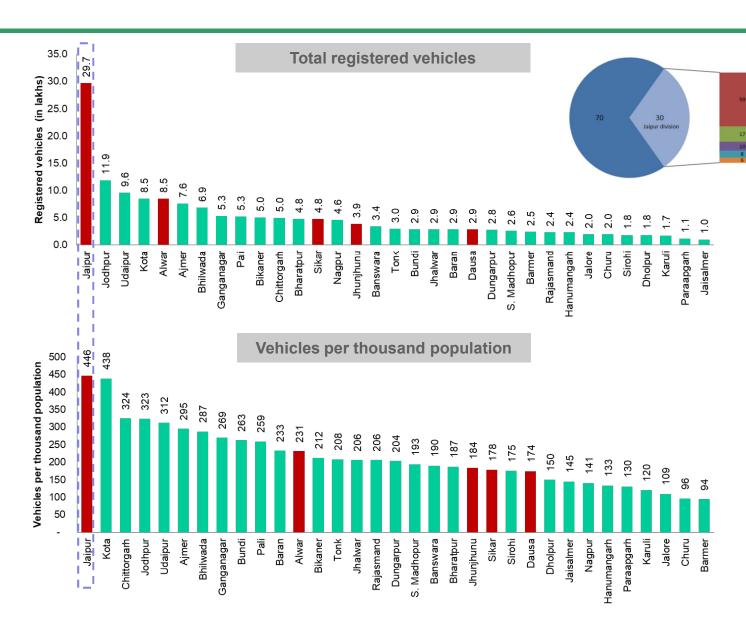


Other district

■ Alwar

■ Sikar

■ Dausa

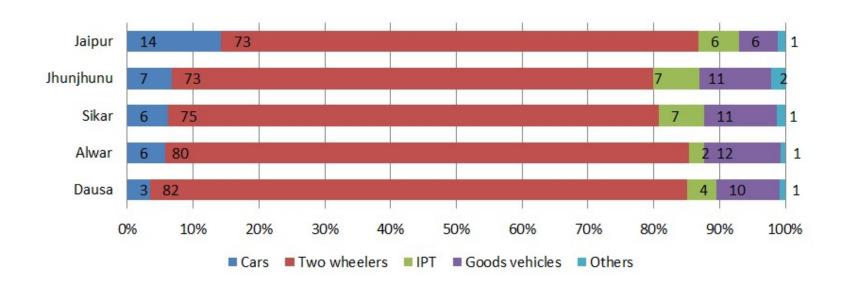


That how Jaipur looks



Distribution of vehicles as per category

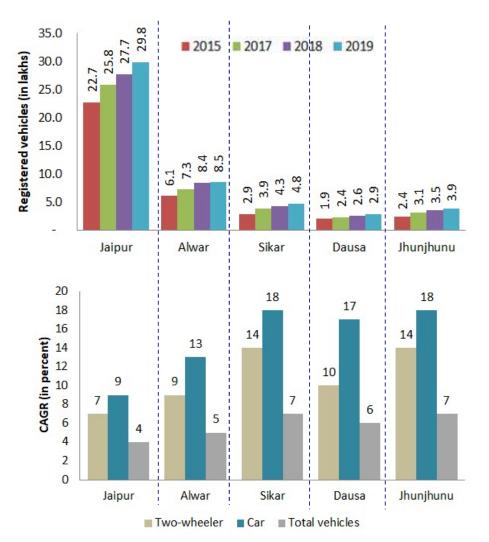




- The share of two-wheelers is very high (i.e. more than 70 per cent of the total registered vehicles)
 across the districts of Jaipur division.
- Jaipur being an urban district has highest share of registered cars (i.e. 14 per cent).

Vehicular growth



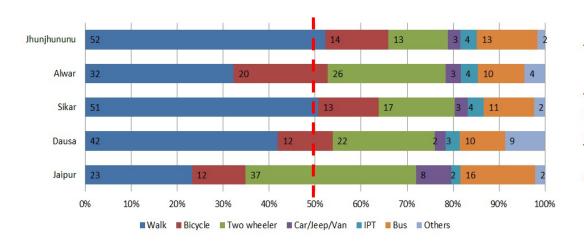


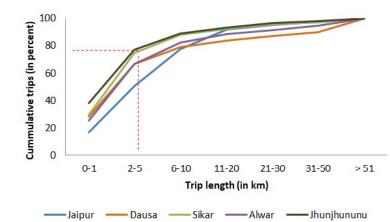
- Although rural districts such as Jhunjhunu, Dausa, and Sikar are far below than Jaipur district in terms of number of registered vehicles but exhibit a higher growth rate.
- Growth rate of cars higher than two-wheelers.
- In case of Jaipur city, vehicles are increasing at a growth rate of 9 % per annum which is even higher than Delhi at 6.9 % per annum (cars are increasing at an even higher rate, i.e. 11 per cent per annum).

Source: Statistical Abstract 2018–19, Transport Department, GoR.

Modal share and trip length: Jaipur division



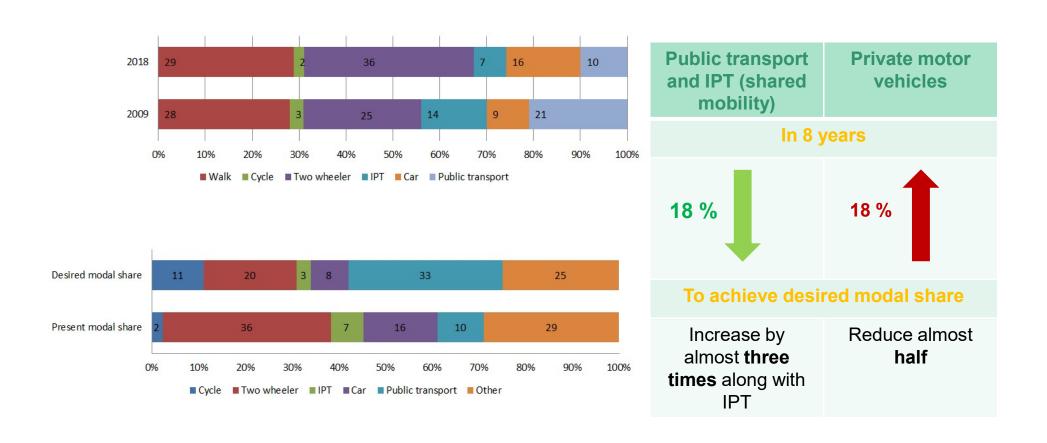




- More than 50 per cent of the total trips across the division (except in Jaipur district) are being made by NMT and end within 5 km distance.
- As these trips are within potential walking/bicyclable distance, improving NMT infrastructure will help in retaining the existing NMT users along with attracting the potential users.

High share of motorized transport and declining share of shared transport: Jaipur city





Mobility scenario



City/ towns	Road transport						Airways
	Inter-city bus	Intra-city bus	Metro	IPT	Walking/ cycling		
Jaipur		CBS and BRT by JCTSL/ private mini	JMRC JAIPUR METRO		Jaipur has PBS system		Jaipur Airport
Alwar	RSRTC			Shared rickshaw, private hire, e- rickshaws, Alwar	SMART CITY JAIPUR	Indian railways	
Sikar	Rajasthan State Road Transport Corporation	NA	NA	Vahini		NO AND	NA
Dausa							
Jhunjhunu							8

What has already been done: Jaipur city







293 buses

40-50 km network coverage

1.6 lakhs of daily ridership



Began in 2010

7 km network coverage

6,622 passenger of daily ridership



40 coaches

9.63 km of network coverage



5.5 lakhs spent on docking stations

2 cycle stations with 40 cycles



Metro

PBS

Need to improve intra-city transport



- All cities/town are connected with RSRTC bus routes but infrastructure availability is inadequate and needs considerable improvement.
 - > Lack of designated bus stops which creates inconvenience to public in boarding and alighting
 - Inefficient utilization of space inside Sindhi camp bus terminal
 - Poor condition of public convenience facilities
 - Encroachment by hawkers and haphazardly parked IPT vehicles
 - Lack of designated IPT pick-up and drop-off points near bus terminal





Need more buses: Jaipur city



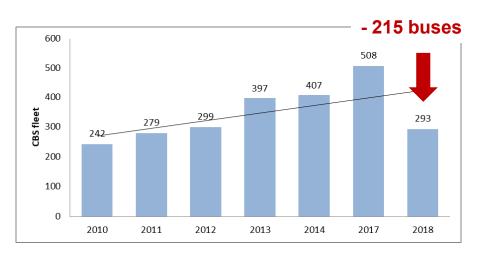
Existing fleet is less as per required fleet

Indicator	Existing	Desired	Gap
Bus per lakh population			
as per Urban Bus			
Specifications		60 or	
(CBS+BRT+minibuses)	24	above	36
Percentage of organized public transport		60 % or	
(CBS+BRT+Metro)	48%	above	12

Note: Calculations have been in terms of equivalent standard buses for the projected population for the year 2020

- One standard bus = 4 minibuses
- One standard bus = 1/3 metro coach

More phase out of buses than increase in new buses



Gradual phasing out of buses due to 'age of fleet' is decreasing available total fleet in operation

Improve bus operations: Jaipur city



- The lack of adequate fleet results in overcrowding during the peak hours.
- The 2,186 private minibuses and IPT also compete with the JCTSL buses because their routes are not properly rationalized. These buses are poorly maintained and are usually overcrowded.





Overcrowded buses during peak hours

Poorly maintained mini-buses

Lack of zebra crossing to access BRT

 Operational performance of buses is poor compared to optimal values which puts risk on the financial stability of the SPV.

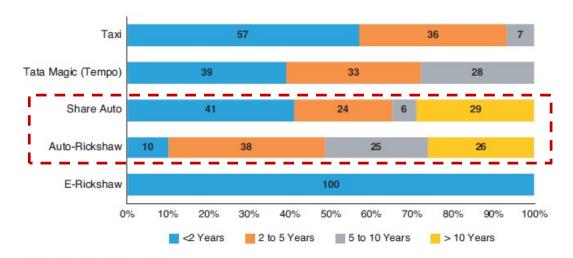
Indicator	Existing	Optimal
High dead km	8.90%	0-2 %
Lower bus productivity		
(operated km / no. of buses held per day)	190-240 km	181 km
Low load factor	53%	70%

Organize IPT service: Jaipur city



Caters **7 per cent** of travel demand.

• IPT services in the city consist of a variety of smaller modes like e-rickshaws, auto-rickshaws, shared autos, Tata Magic (tempo), taxi, etc.



Source: CTTS for Jaipur Region

Large number of private hire and shared auto-rickshaws **older than 10 years**



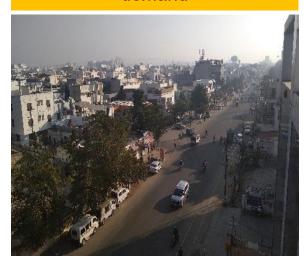
Lack of designated halt and go points for IPT services

The capacity utilization ratio of tempos is higher than one (i.e. 1.8) which indicates overcrowding.

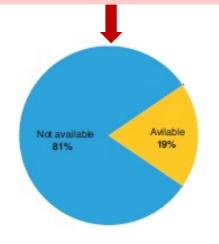
Improve NMT connectivity and infra: Jaipur city



Caters 31 per cent of the travel demand



Absence of footpath on Dalda Road





The only painted 1 km bicycle lane



Exclusion of street vendors from road design



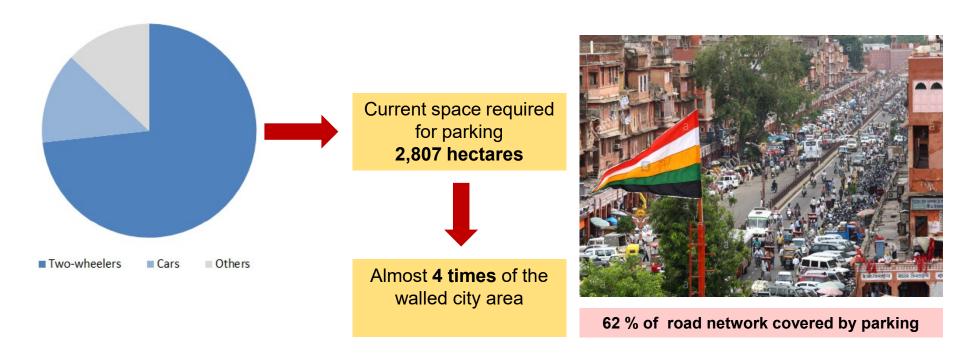
Poorly maintained PBS station



Footpaths encroached by parked vehicles in walled city

More vehicles but where to park???





- 62 per cent of road network is covered by authorized or unauthorized on-street parking facilities.
- Except authorized parking space in walled city, all other on-street parking is free.
- Compliance with Rajasthan High Court order for showing proof of parking before getting the vehicle registered is poor.



More vehicles but where to park???

Multiple lanes of parking causing hindrance to traffic



Image source: multiple web sources

Mobility scenario in other towns of Jaipur division





Image 16: IPT services in Dausa town



Image 17: People waiting for RSRTC buses near the flyover in Dausa town



Image 18: Haphazardly parked vehicles in Dausa town

Heavy duty vehicles and freight traffic



- Proximity to the Golden Quadrilateral and presence of industrial townships is a major factor for considerable movement of goods freight.
- No formal truck terminals are present in Jaipur and Sikar district.
- In absence of truck terminals, **long queues of parked trucks** at various locations such as Gopalpura Bypas, Sikar Road can be found. Also **overloading** of vehicles is another major issue.







Strategy to control emissions from heavy duty trucks. A targeted scrappage policy is needed to replace
old trucks with BS VI compliant trucks that can give 90 per cent emissions reduction benefits.

Way Forward: Strategies to improve bus Service



- Augment bus fleet and operations (rationalize routes, improve bus operation and maintenance practices).
- > Technological interventions in scheduling practices, ticketing, and information.
- Infrastructure improvement (multi-modal integration, depot improvement, bus shelters and their design)
- Escalate transition to EV in public transport(procurement of 100 electric buses is in progress)



Difficulty in boarding/alighting

Way Forward: Strategies to improve IPT Service



- > Phase out old IPT vehicles and link it with incentives to purchase BS VI/ electric IPT.
- > Organize IPT system (enforcement of safety standards, driver training and licensing)
- Infrastructure integration for IPT service (auto stands, halt and go points)



Black smoke emitting auto-rickshaws



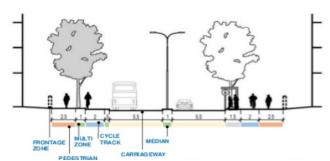
Lack of designated halt and go points for IPT services

Way Forward: Prioritize low carbon modes



Roads for all

- Restructure roads in principle of 'complete road design'
- Identify network/tourism loops to prioritize Non-Carbon modes such as e-auto, e-rickshaw, walking, cycling infrastructure





Complete street design for all road users: Nanded city

Fast forward adoptation of EV Policy

- Notify the draft EV policy and prepare a robust and time-bound implementation roadmap.
- Special tax exemption for electric vehicles especially buses and e-auto.
- Amend building byelaws and regulations for EV.
- Develop EV vehicle infrastructure ecosystem.
- Link electric mobility with eco-tourism will be an important opportunity.

Way Forward: Parking as a travel demand management strategy



- Introduce a comprehensive parking policy and parking area management plans
- > Demarcate and rationalize all parking supply (residential, commercial, and other areas)
- > All parking supply should be paid (time and location based variable parking prices)



THANK YOU