



The Role of Spatial Data in India's Transportation Infrastructure Planning

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Land Use
Data



Informed
Decision
Making

Renewed perspective on data creation for sustainable transportation planning



SUSTAINABLE
mobilityTM
FOR ALL

Presentation Structure

- ▶ Urbanization and transportation projects
- ▶ Bus Rapid Transit (BRT) evaluation: Delhi and Ahmedabad
- ▶ Flyover project evaluation: Kolkata
- ▶ The Way Forward: Data Creation
- ▶ Conclusion

Ministry of Urban Development (MoUD) introduced National Urban Transport Policy (NUTP) in 2006

Integrated Public
Transport Systems

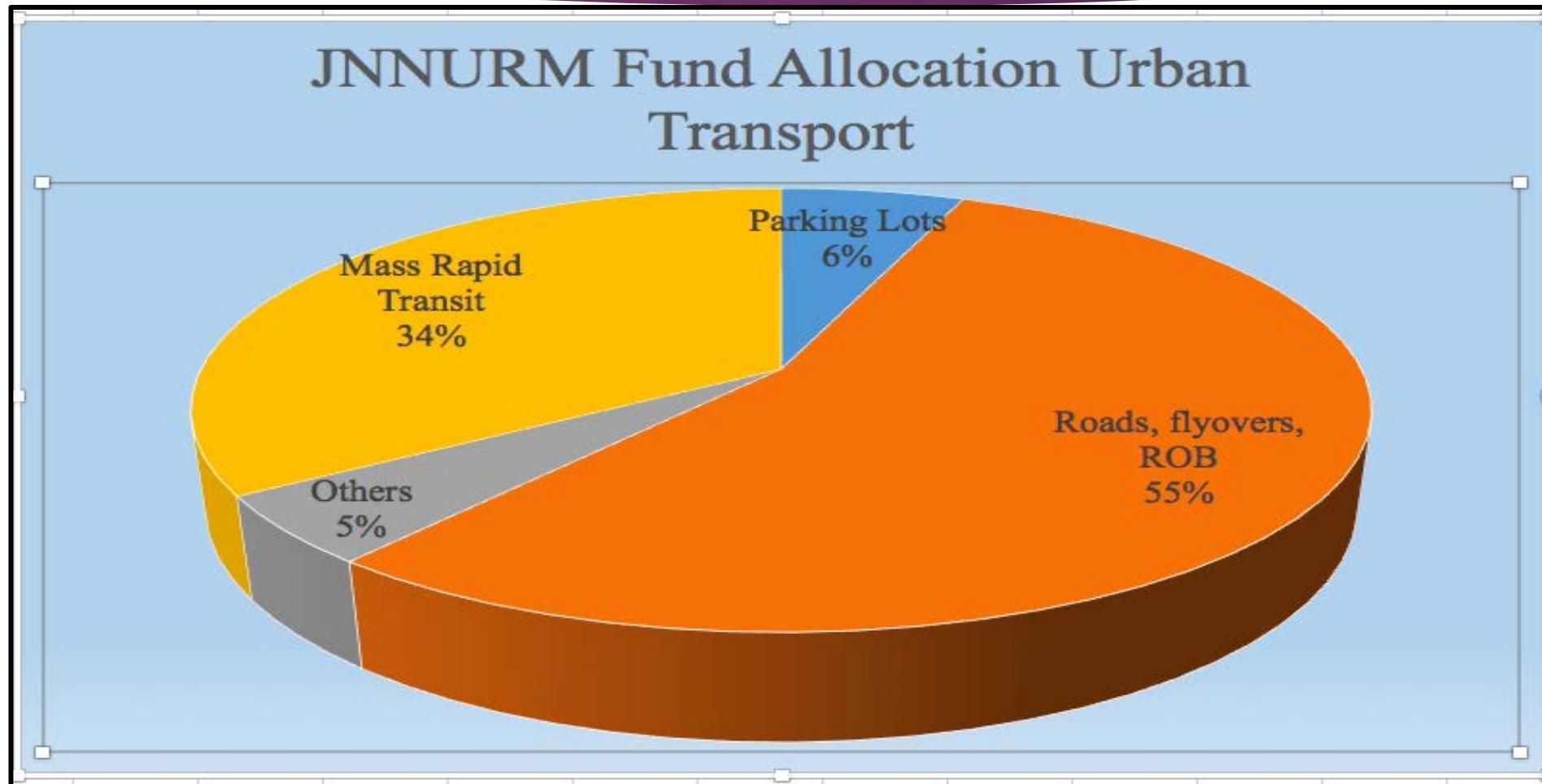
Land Use and
Transportation

NUTP

Priority to public
transportation

Road space allocation

89% JNNURM transportation fund is allocated for mass rapid transit, roads, and flyovers.



1. Bus Rapid Transit (BRT) in Delhi

- ▶ (1980) population=6.2 million
- ▶ (2011) population=16.7 million

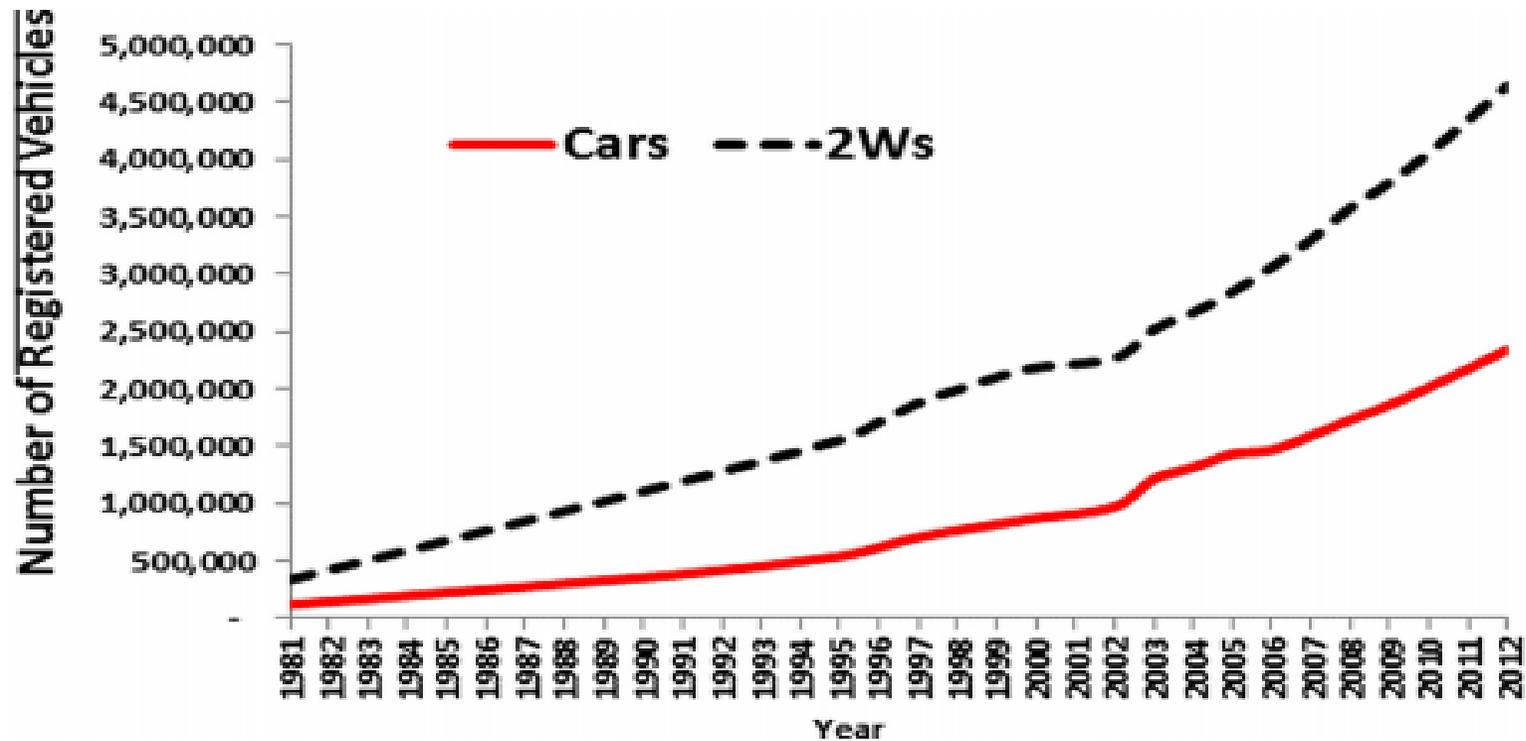


- ▶ Increased travel demands and worsening air pollution



- ▶ BRT introduced in 2008

Since its operation in 2008, Delhi's BRT has not helped resolve congestion



Car ownership and motorcycle ownership in Delhi has continued to increase

Delhi's BRT has been criticized by media and academia

Travel Delays

Selective Data Use

Poor Infrastructure Design

BRT in Ahmedabad

- ▶ Received several national and international recognition



Ahmedabad's BRT has also been criticized in academia

- ▶ 10 to 12 percent annual increase in vehicle ownership

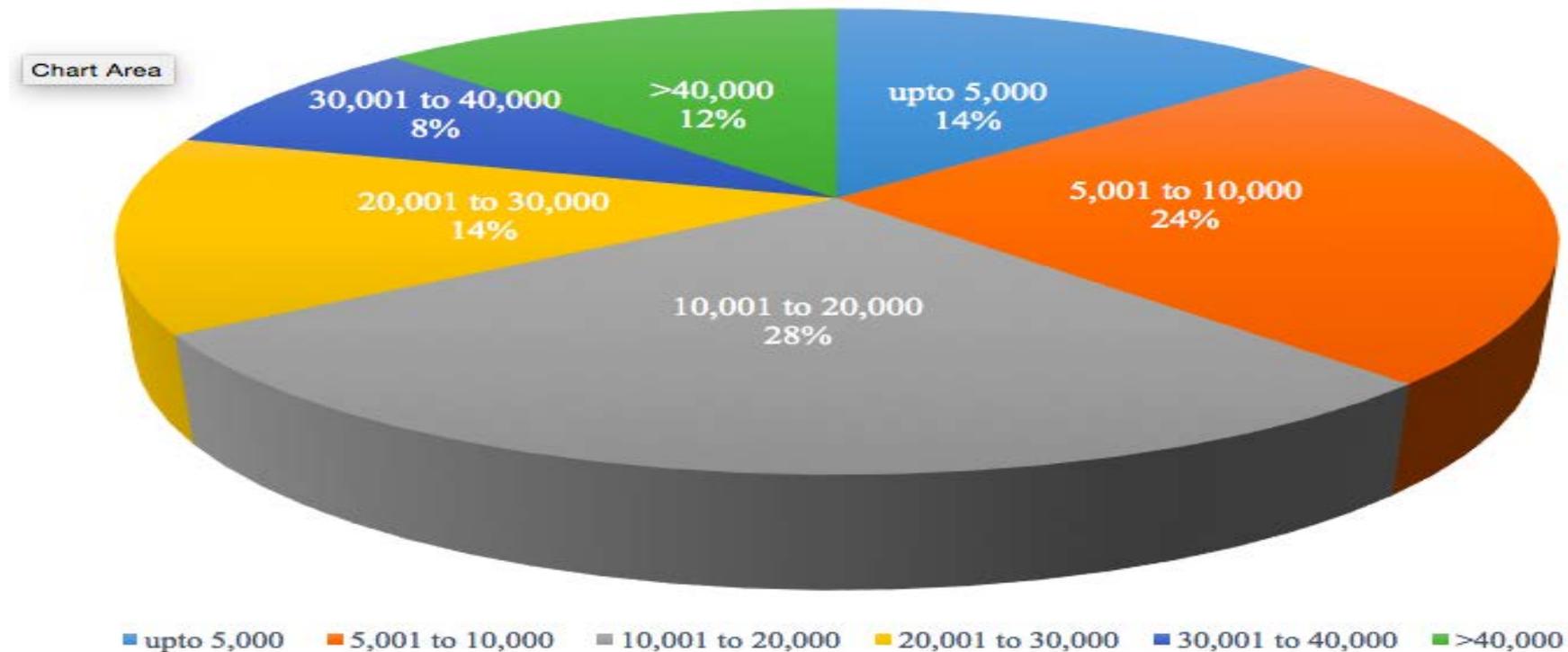


- ▶ 27 percent BRT revenue collection decline

Not as
successful as
commonly
discussed

Affordability of Ahmedabad's BRT is also discussed

Ahmedabad's BRT Users by Income Group in INR (Indian Rupees)



BRT is within 500 meters distance from one's home for most lower income families

Problems faced by bicyclists and pedestrians

Bicycle lanes

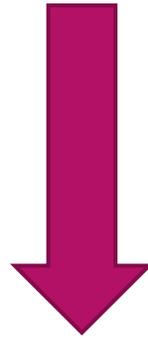
- 26.2 percent has cycle tracks
- 65 percent unobstructed

Pedestrian lanes

- 83.7 percent has pedestrians pathways
- 50 percent unobstructed

Ahmedabad's BRT displaced residence and primary economic activity of many.

- ▶ 7500 households displaced



- ▶ 1500 households received support for resettlement

Existing academic works have not explicitly addressed land use in evaluation. Why?

Economic Activity Affected

Land Use Integration
Discussion in Academia



Spatial Land Use Data?

Planning for bicyclists and
pedestrians

Affordability

2. Kolkata's Flyover Project: Case Study



2. Kolkata Flyover Project: Evaluation in Academic Works

1. Land Acquisition Challenges

2. Project bidding

3. Local voices not included

Land Use Integration Was Not Explicitly Discussed

Flyovers and congestion mitigation?



Feasibility study



Land use perspective



Useful Spatial Data Availability

Spatial Data: To overcome the missing link between land use and transportation

SUSTAINABLE
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FOR ALL

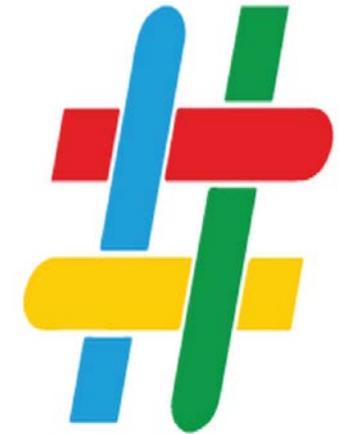


- ▶ Improved data technologies
- ▶ Up to date data
- ▶ Data as a social artifact

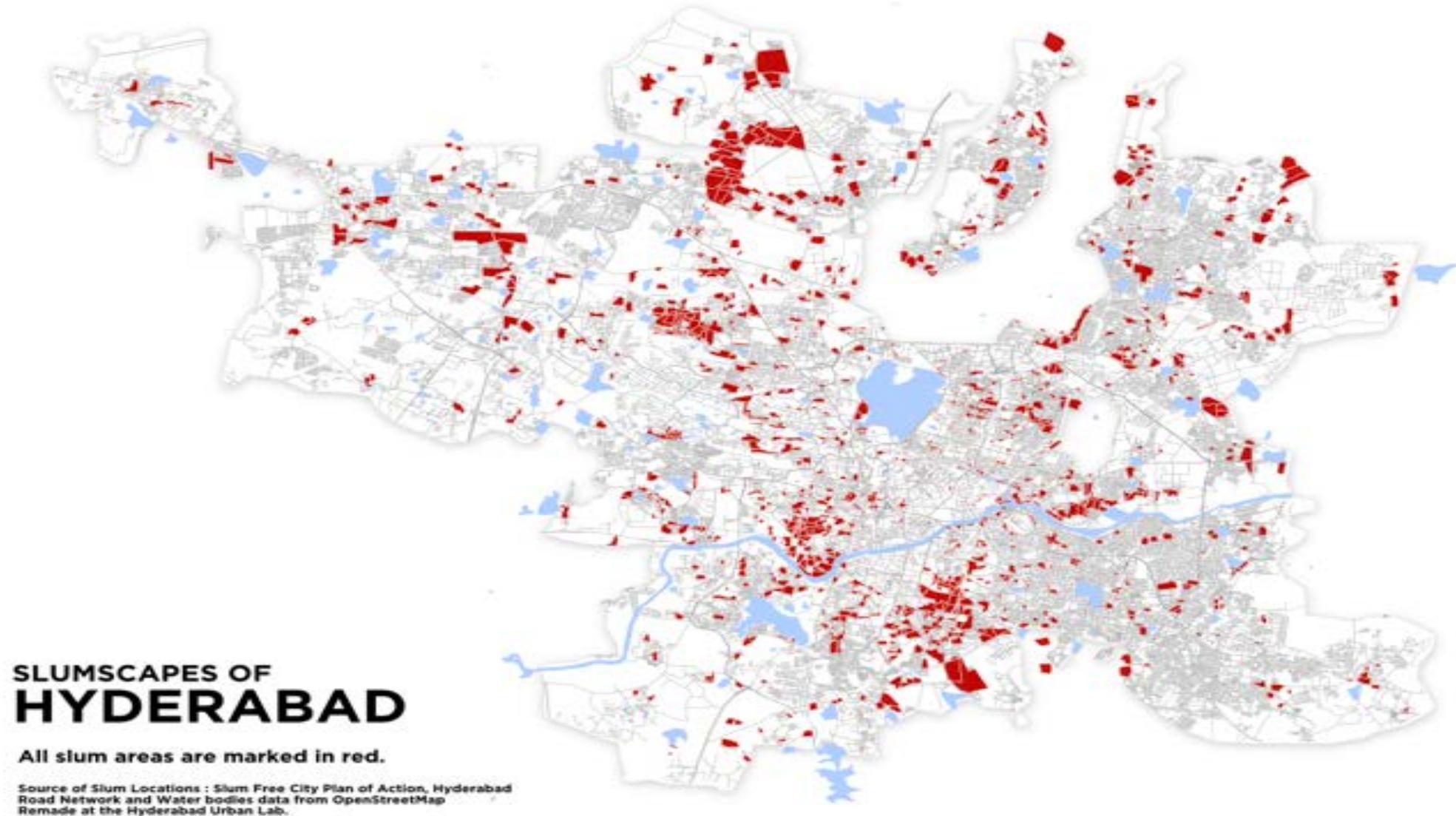
The Way Forward: Creating Useful Data

- ▶ Role of research institutions and actors
- ▶ Data generation and data sharing
- ▶ Building knowledge to approach transportation problems

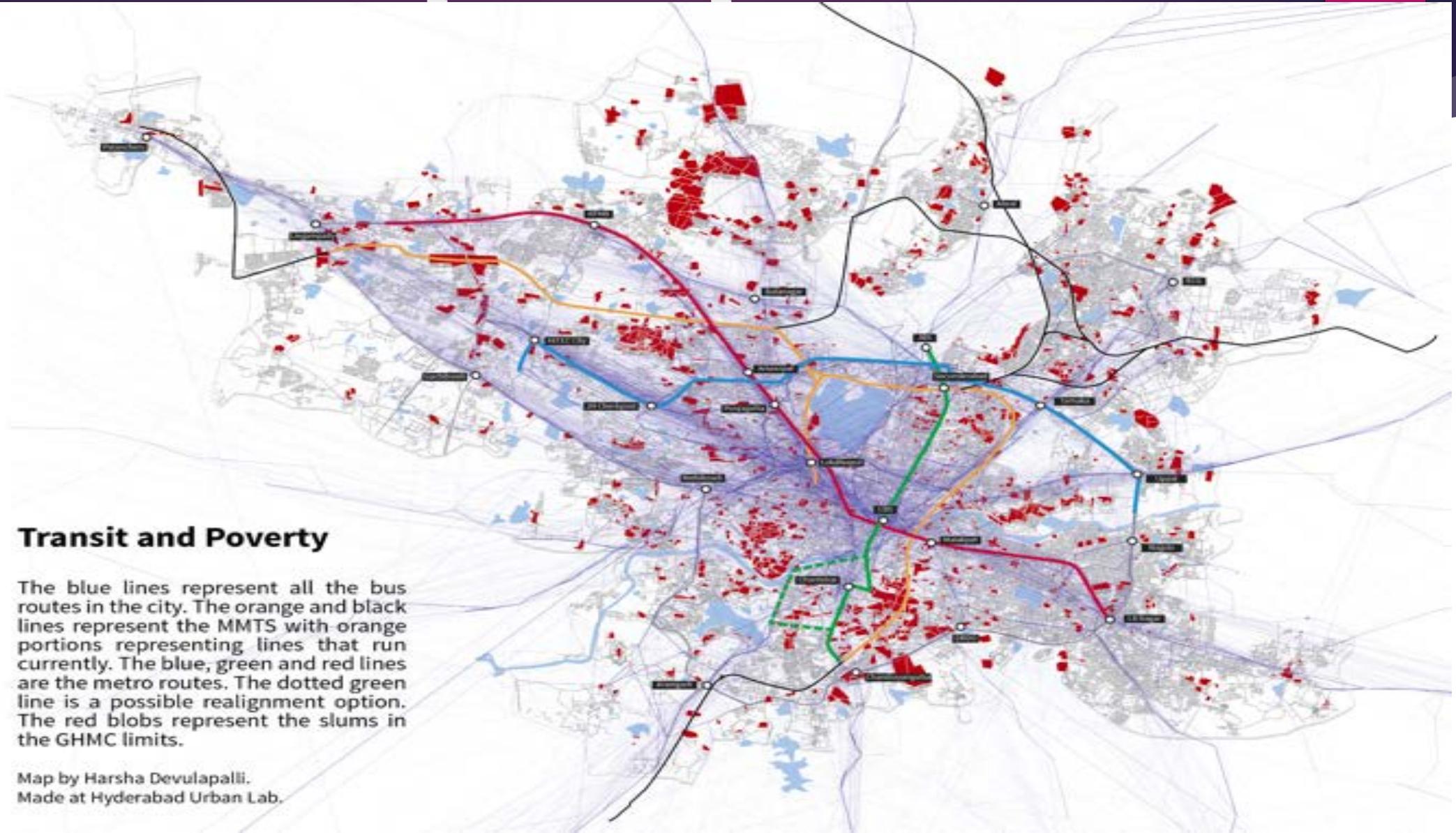
Hyderabad Urban Lab



An Example of Improved Data



An Example of Improved Data



Conclusion



- ▶ Strengthen, recognize, and expand the use of spatial data into transportation planning for sustainable urban mobility.

Thank You For Listening